

THE
BRICKVILDER
AN
ARCHITECTURAL
MONTHLY



PUBLISHED BY ROGERS & MANSON
EIGHTYFIVE WATER STREET BOSTON MASS.

FISKE & CO. INC. **FACE BRICKS** **IRE BRICKS**

Cements, Limes, Roofing Tiles, Architectural Terra Cotta,
 Sewer Pipe, Common Brick, Facing Brick, Etc., Etc.

Boston Office: 161 DEVONSHIRE STREET
 New York Office: FLATIRON BUILDING

NEW YORK 1170 Broadway
 BALTIMORE American Building
 WASHINGTON Home Life Building

O. W. KETCHAM

Master Builders Exchange
 PHILADELPHIA

Front Brick
 Enameled Brick
 Hollow Tile Fireproofing
 Roofing Tile

ARCHITECTURAL TERRA COTTA
 Works: Crum Lynne, Pa.

GRUEBY **FAIENCE CO.**

K AND FIRST STREETS
 BOSTON

MAKERS OF TILES
 DECORATIVE FAIENCE
 CERAMIC MOSAICS

The Hartford Faience Co. **HARTFORD, CONN.**

NEW YORK 1123 BROADWAY
 BOSTON 512 SOUTH BLD.

ARCHITECTURAL FAIENCE

(All Colors)

FAIENCE MANTELS

FAIENCE TILE AND BRICK

Write for our new catalogue.

ATLANTIC **TERRA-COTTA CO.** **ARCHITECTURAL** **TERRA-COTTA**

Factory, TOTTENVILLE, N. Y.
 New York Office, 287 FOURTH AVE.
 Boston Office, PADDOCK BUILDING.
 Philadelphia Office, REAL ESTATE TRUST BLDG.
 Pittsburg Office, 409 MARKET ST.

Brick, Terra-Cotta & Tile Co.

M. E. GREGORY, PROPRIETOR,
 MANUFACTURERS OF

ARCHITECTURAL **TERRA-COTTA**

Works and Main Office: CORNING, N. Y.

NEW YORK . . . E. H. Thomas, 1123 Broadway.
 NEW ENGLAND . . . Eastern Terra Cotta Brick & Tile Co.,
 423 Old South Building, Boston, Mass.
 SOUTHERN AGENCY . . . D. L. Gaskill, Bell Block, Salisbury, N. C.
 BALTIMORE, MD. . . United Supply Company, 221 St. Paul St.
 PATERSON, N. J. . . L. A. Plagat, Second National Bank Bldg.
 WASHINGTON, D. C. . . Commercial Supply Company,
 Commercial Bank Building

Robert C. Martin & Son.

156 Fifth Avenue,
 New York.

Front Bricks,
 Enameled Bricks,
 Paving Bricks

AND CLAY PRODUCTS GENERALLY.

ROOKWOOD **Architectural Faience**

HAT GLAZES IN ALL COLORS
 ABSOLUTELY PERMANENT
 EXTERIOR AND INTERIOR

THE ROOKWOOD POTTERY CO.

CINCINNATI, OHIO.

New York Office - - 1 Madison Avenue.

Conkling-Armstrong **Terra-Cotta Co.**

Manufacturers of

Architectural Terra-Cotta

Works, PHILADELPHIA

OFFICES

Builders' Exchange, PHILADELPHIA

1133 Broadway, NEW YORK

Genuine New England "Harvard" Bricks

FRONT **BRICKS** ENAMELED

ARCHITECTURAL TERRA COTTA

Carter, Black & Ayers,

1 Madison Ave., NEW YORK,

AGENTS FOR

North-Eastern Terra Cotta Co.
 BRADFORD, PA.

TILES FOR FLOORS AND WALLS ENAMELED OR EMBOSSED

Made for Decorative and Practical Purposes by

Alhambra Tile Company, Newport, Ky.; American Ec-
 onastic Tiling Company, New York, N. Y., and Zanesville,
 Ohio; Beaver Falls Art Tile Company, Ltd., Beaver Falls,
 Pa.; Cambridge Tile Manufacturing Company, Covington,
 Ky.; Grueby Faience Company, Boston, Mass.; Mosaic Tile
 Company, Zanesville, Ohio; National Tile Company, Ander-
 son, Ind.; and Morrisville, Pa.; Matawan Tile Company,
 Matawan, N. J.; New York Vitreous Tile Company, Brook-
 lyn, N. Y.; Ohio Tile Company, Hamilton, Ohio; Old Bridge
 Enameled Brick and Tile Company, Old Bridge, N. J.;
 The C. Pardee Works, Perth Amboy, N. J.; Providential
 Tile Works, Trenton, N. J.; Star Ecconastic Tile Company,
 Pittsburgh, Pa.; Trent Tile Company, Trenton, N. J.;
 U. S. Ecconastic Tile Works, Indianapolis, Ind.

EXCELSIOR **TERRA-COTTA CO.**

Manufacturers of

Architectural Terra-Cotta.

Works: Rocky Hill, N. J.

N. Y. Office: 1170 Broadway.

Buffalo: JOHN H. BLACK, Builders' Exchange.
 Pittsburgh: MARTIN BRICK CO., Empire Building.
 Boston: F. E. COOMBS, 224 Washington St.
 Philadelphia: W. L. McPHERSON, 1215 Filbert St.
 Washington and Baltimore: SAMPLE & MARSHALL
 CO., Colorado Building, Washington, D. C.
 Norfolk, Va.: GEORGE S. FRIEBUS, Carpenter Bldg.

Pfotenhauer & Nesbit,

31 James Building, Broadway, cor. 4th St., New York.

FRONT BRICK

In Red, Buff, Gray, Mottled, White, Etc.
 Enameled Brick, Roofing Tiles, Paving Glitters, Etc.

Our bricks are of the highest grade manufactured. Made
 in all colors and shapes. Called carefully in respect to shade
 and size. Large stocks carried at our several manufacturing
 plants.

Sole agents for the genuine New England

"HARVARD" BRICK

for the States of New York, Connecticut, New Jersey,
 Pennsylvania, and Delaware. Also all Western and South-
 western States.



POTTERY
 —AND—
 GARDEN
 POTTERY

SEND FOR
 BOOKLET **Gates Potteries**
 642 Chamber of Commerce - Chicago

INDIANAPOLIS **TERRA-COTTA CO.**

MANUFACTURERS OF

ARCHITECTURAL
TERRA-COTTA

IN ALL COLORS.

THE BRICKBUILDER

VOLUME XV

JUNE 1906

NUMBER 6

PUBLISHED MONTHLY BY ROGERS & MANSON

85 WATER STREET

BOSTON, MASSACHUSETTS

Entered at the Boston, Mass., Post Office as Second Class Mail Matter, March 12, 1892.

Copyright, 1906, by ROGERS & MANSON

Subscription price, mailed flat to subscribers in the United States and Canada \$5.00 per year
Single numbers 50 cents
To countries in the Postal Union \$6.00 per year

SUBSCRIPTIONS PAYABLE IN ADVANCE

For sale by all news dealers in the United States and Canada. Trade supplied by the American News Company and its branches

ADVERTISING

Advertisers are classified and arranged in the following order:

| | PAGE | | PAGE |
|----------------------------------|------------|--------------------------|------------|
| Agencies—Clay Products | II | Brick Enameled | III and IV |
| Architectural Faience | II | Clay Chemicals | IV |
| “ Terra Cotta | II and III | Fireproofing | IV |
| Brick | III | Roofing Tile | IV |

Advertisements will be printed on cover pages only

CONTENTS

PLATE ILLUSTRATIONS

FROM WORK BY

H. D. BURNHAM & CO., JOHN A. FOX, GEORGE HUNT INGRAHAM, PARKER & THOMAS,
THE CASA POLLINI, SIENA, ITALY, WILL S. ALDRICH, DEL.

LETTERPRESS

| | PAGE |
|--------------------------------------------------|-----------------------------|
| MAUSOLEUM OF THE SAINTS, AT ARDEBIL, PERSIA..... | Frontispiece |
| EDITORIALS | III, IIII |
| BURNT CLAY CONSTRUCTION AT SAN FRANCISCO..... | F. W. Fitzpatrick 113 |
| STUDY IN PARIS..... | Gilbert Hindemyer 117 |
| A VILLAGE COURTHOUSE. III | Albert Randolph Ross 119 |
| WEST END HOUSES, LONDON..... | R. Randal Phillips 121 |
| A VILLAGE RAILWAY STATION. I | Christian Morgenstierne 126 |
| EDITORIAL COMMENT AND SELECTED MISCELLANY..... | 128 |



MAUSOLEUM OF THE SAINTS, AT ARDEBIL, PERSIA.

THE BRICKBUILDER

VOL. 15 No. 6

DEVOTED TO THE INTERESTS OF
ARCHITECTURE IN MATERIALS OF CLAY

JUNE 1906

Lessons of the San Francisco Fire.

WITHIN a period of less than thirty-five years this country has been visited by at least five serious conflagrations. The Chicago fire was the immediate originating cause of our present fireproofing methods. These methods during the past thirty years have been steadily developed along lines which we believe lead to complete protection, and there is no doubt but that our modern fireproofing devices are amply sufficient to protect against any merely local fire. There have been, however, only two cases in which the systems could be studied in their power to resist the effects of a general conflagration, namely, at Baltimore and, more lately, at San Francisco. In the latter case the situation was greatly complicated by the effects of the earthquake, in that the vast majority of the buildings in the devastated district being of inflammable construction were reduced to a condition which afforded unlimited opportunity for the ensuing fire to gain its full force unchecked. Furthermore this was the only fire in our history during which there was practically no opportunity to successfully combat it by the use of water, and the flames were unchecked in their attacks upon the relatively few and isolated buildings of so-called fireproof construction.

The fire has not brought out any really new facts in regard to fireproof construction. It has, however, emphasized all of the lessons of the past and has made more imperative the civic necessity of fireproof structures as barriers to a conflagration. San Francisco was very lax in its laws and it has paid the penalty. Whether the city will profit by this bitter experience is a question which time alone will answer. The fire and the earthquake were observed and studied on the spot by scores of competent trained observers. Engineering and architectural papers have been filled with full accounts of what happened and what resulted, so that it is not difficult to determine how the different buildings behaved under extreme stress. It is, however, only possible to arrive at just conclusions by taking the sum of the evidence presented and drawing general conclusions which can be corroborated by the testimony of different experts, for while theoretically any trained architect or engineer should be able rightly to measure the consequences and the lessons of the fire, the personal equation counts for so much that very few of the statements thus far published are entirely free from bias. Furthermore it is a little astonishing that trained observers should so often

fail to note the leading facts in cases of this sort. For example, one of the engineering papers published a long study in detail of the effect of the fire on the different buildings, in which the writer in only a very few instances made the slightest mention of the materials actually employed in the construction, aside from stating that the buildings were or were not of steel frame type. Again, the personal equation colors very largely one's appreciation of the amount of damage. In looking over the burned district of San Francisco the buildings which have stood at all, which have retained any semblance of structure, are such an exception that some have credited them with far less damage than will probably be found to be the case when actual reconstruction takes place.

The immediate interest of this journal lies in the manner in which the fireproofing systems have stood the test. Our position has for years been that a material which was made by the action of heat could easily be counted upon most successfully to stand the action of heat in a building, and that the burned clay products were the most efficient fireproofing mediums within our reach. At the same time we have most carefully studied all the reports of experts who have visited San Francisco, and have examined the ruins through our personal representatives in the endeavor to determine just what have been the relative merits of the two systems of fireproofing which are now most prominently before the market.

IN this fire concrete has had its first severe test. Terra cotta was used in the Union Trust, the Crocker, both the Chronicle buildings, the Emporium and the Flood buildings, beside many others, while nearly all the leading concrete systems were to be found in numbers of the buildings which are still standing in more or less fragmentary condition. But in going over the published studies of the behavior of concrete and the terra cotta fireproofing there seems to be one fact that comes out again and again and which is brought out very strongly in the excellent review written by Mr. B. B. Holland for the *Engineering Record*. To quote directly: "It is very hard to get correct information regarding the destruction of buildings, as every person seems to have a different story to tell as to what caused the damage, and as to how hot the fire was around any of the buildings. I find that in all cases where the fire was very severe and the concrete covering of columns had come off, the damage to the columns was far greater than where the columns

had been covered with hollow tile and the tile had fallen off. It seems the tile stayed on the columns long enough to protect them from the fire, while in the case of the concrete protection the fire seems to have eaten right through and melted the columns in many cases. My examination in all these cases has been as careful as possible. I went over this ground five times and got all the information that I possibly could regarding each building from different individuals." Again: "In the Emporium Building, six stories with segmental tile arches, tile partitions and column coverings, the building is a wreck. It was subjected to a very hot fire and was dynamited three times, but where the columns stood the tile arches are still intact." Also, in the Crocker Building, fireproofed entirely with hollow tile, where the partitions are down the tile is not broken but is in good condition, though it is especially noted that the fire was very hot. On the other hand, in the Sellers Building, while the concrete of the floors seems in good condition, on careful examination it was found to be very loose and soft, though there was not much heat in the building. In the Postal Telegraph Building, fireproofed entirely of concrete, the column coverings are all off and the columns and beams badly damaged. This can be contrasted with the Union Trust Building, fireproofed with terra cotta, where most of the damage was done by fire, the column covering being all off on the first story but the columns not injured. Compare also the Hamilton Building, of concrete floor arches and metal partitions, in which the column coverings are all gone and the concrete floors soft and easily broken.

WE are not trying to draw any parallel nor to claim for terra cotta that it is perfect, either in its composition or in its method of use, neither would we say that concrete can not be used to advantage in a building. We do not expect perfection in any system of fireproof construction, nor is it fair to claim that so far there has been evolved any system which is more than fire-resistive or to expect that a structure can be shaken by a severe earthquake and thoroughly gutted by a fire developing heat enough to melt glass and terra cotta and yet have much left of it. The point is whether or not our modern systems of fireproofing can and do in the last extremity save the structure of steel. The surface, whatever it may be, is bound to be ruined. We maintain that the records of the San Francisco fire show that terra cotta has accomplished all that is claimed for it, and that even under the most severe case we can now claim with perfect justice that the structure of a building can be efficiently protected against conflagration. On the other hand, it goes without saying that nothing can withstand such a combined catastrophe as overturned San Francisco.

We have said that San Francisco has paid the penalty of her lax laws. So far as we can ascertain there are only two buildings in the burned district which were protected by wire glass and shutters. In the new Telephone Building the windows were provided with frames of metal and the two lower stories were glazed with wire glass. This building was exposed to a fire so excessive that the heat within the building was sufficient to melt the glass cells

of the storage battery. Flames did not break out within the building, however, owing to the exclusion of air by the metal window screens, doors, etc. It is even stated that curtains hung at the windows were charred and fell to the floor without producing flames. The shutters were of the rolling type, coiling up into the metal window frames. Also in the California Electrical Company's works, which were of so-called slow burning mill construction, the window frames were entirely of metal, glazed with wire glass, and the building had in addition a sprinkler system supplied from a fifty thousand gallon tank on the roof. The earthquake affected the building but slightly, and the fire was sufficient to melt the wire glass in one or two of the windows. Fire broke out in several parts of the building, but was extinguished by the sprinklers, and the building was saved with very little damage. These two structures do not give us any additional light on the action of either concrete or terra cotta in a fire, but they do emphasize the scanty extent to which San Francisco was equipped with what is recognized as thoroughly up-to-date fire protection.

IN conclusion, our contention is that in San Francisco the terra cotta fireproofing, in every case where it was properly applied, offered a certain flexibility, by reason of its many joints, which minimized the disruptive effect of the earthquake, and that, so far as we know, in every case where terra cotta was properly used for protection against fire the damage to the steel frame was extremely slight. We have not been able to locate a single instance in which structural damage resulted from failure of the terra cotta protection when it was applied in a reasonably thorough manner. On the other hand, this fire seems in our judgment to show that any monolithic floor construction will not stand a severe shock without splintering or shattering so as to be practically worthless, and that while terra cotta protection frequently falls off after a fire when cooling, leaving the steel bare, concrete under similar conditions will crack and fall off before the fire has reached its maximum, leaving the steel entirely exposed to the destructive effects of heat. Furthermore, we find that terra cotta passes through the fire without apparently losing its strength. The action of fire on concrete is not fully known as yet, but the results of the experiments which have been conducted at Watertown and the observed results at San Francisco are evidence that when subjected to excessive heat concrete undergoes a molecular change which may not be apparent at first, but which in time is sure to bring about the disintegration of the material.

We admit freely that discussions of this sort are more or less academic, that in a building which suffers a loss of sixty or seventy per cent the question of the exact system of fireproofing is not of vital interest to the man who pays the bill, when neither system affords absolute protection. But if the evidence of San Francisco is to be taken as a whole and the absolute degree of protection considered, the system which has stood the best is that which is built up in small pieces thoroughly tied together, possessing flexibility against shock combined with resistive powers to heat, and nothing but terra cotta would answer fully this description.

Burnt Clay Construction at San Francisco. ✓

EXTRACTS FROM REPORT OF F. W. FITZPATRICK, EXECUTIVE OFFICER OF THE INTERNATIONAL SOCIETY OF BUILDING COMMISSIONERS, ON INVESTIGATIONS CARRIED ON IN BEHALF OF THAT SOCIETY, THE UNITED STATES GOVERNMENT, THE BRICKBUILDER AND OTHER TECHNICAL JOURNALS, ETC., ETC.

AS Mr. Charles H. Alden well said in the last issue of THE BRICKBUILDER, "Only a personal investigation of the ruined city enables one to realize the extent of the destruction." Naturally the stricken people seek to minimize the actual damage by the earthquake, while the architects and builders are particularly anxious to impress one with the notion that dynamite did the greatest damage to the buildings that particularly interest the readers of this journal.

In no city, excepting perhaps New Orleans, was there so much highly inflammable, poor construction. San Francisco was literally ninety per cent wood, and, for a city so used to earthquakes of varying degree and that could reasonably expect a very severe shock some time, its general construction was, to say the least, careless. In the tall buildings only was there the slightest precaution taken against shake, and that consisted only in very thoroughly bracing the steel frame. In all else, the stonework, the brickwork, the fireproofing, the work was done as if it were always to rest upon a level, immovable bed. More than that, even in her tall buildings San Francisco was built from fifteen per cent to fifty per cent poorer in construction than the work generally found in our eastern cities, while it would be reasonable to expect, on account of quake and exceedingly great fire hazard, that she would have built from fourteen per cent to thirty per cent better and stronger than anywhere else.

Her local brick is not of poor quality, and the brick she bought elsewhere is of the best; her local terra cotta was sharp, well modeled, but too thin and not scientifically constructed to resist fire, lacking in sufficiency of web and in uniform thickness of assailable faces; her fireproofing tile floors were largely of side construction and of dense tile, forms and material not acceptable in the best practice East; her column coverings were light, and so were her partitions. The work in no case was up to the eastern standard, and certainly not what one should do in the face of the possibilities there. It was all that was demanded of the builders; it was the class that was accepted and generally better than exacted by the ridiculously lax building regulations. The people are paying the penalty for their sins. All this laxity, if not ignorance, has spelled a loss to the extent of fully \$300,000,000! In the burned district the quake damage alone would have amounted to \$10,000,000 at most.

In the tall buildings, so-called "fireproof," the brickwork was merely shelved on the frame and carried story by story. No additional bonding or tying of the wall in itself nor tying to the frame was done, and the quake effects show, where any damage is apparent, that these walls gripped tightly at top and bottom but were bulged in the middle of the span, sometimes resulting in hori-

zontal cracks at the bearing, but more frequently in cross fissures as in the New Chronicle Building. The terra cotta cornices were not overmuch tied in, and it is indeed a wonder that more sections of them were not shaken to the street. In few cases were the steel column protections of tile well jointed and adequately tied to the columns. The result was that in many instances this protection failed, the column buckled and let down the loads from above, causing much damage. In some cases the facing brick were not adequately bonded to the backing, with the result that that facing peeled off in huge sections. In the cheaper buildings, noticed particularly outside of the fire section, the brickwork was very poorly executed and but little if any tying done between the wood framing and those brick walls. Naturally, with such conditions, plus the use of sand, water and (very little) lime mortar, roof trusses "kicked" against gables and piers, and even the newest buildings have about as much brick scattered about the streets as still remain in the walls.

This is the unattractive side of the picture, and it has been most artistically touched up and exploited by those to whose interest it is to discredit burnt clay products. They have done their work at much expense but pretty thoroughly, for the people generally, not appreciating the real inwardness of the thing and following the lead of these clever but unprincipled molders of public opinion, are loud in their denunciation of brick and clamor that wood only is quake-proof.

The obverse of that picture is that wherever burnt clay products were used with the slightest skill by the architects and put in place as they should be, they have given a splendid account of themselves and stand out conspicuously superior to anything that has passed through the fire and yet preserved any resemblance to its former self.

Preaching has had but little effect upon San Francisco builders (and alas! it seems to have but little upon most of the others), so possibly this terrific lesson may have a salutary effect upon them and graphically point the way to what they must do to secure a really fireproof and quake-proof construction. Heretofore they have imperfectly placed a little fireproofing material around their steel frames, and deemed that a sufficient precaution and a sort of heavenly dispensation to go ahead and do everything else about that building as flimsily and as inflammably as possible, brazenly assuring owners and occupants that the structure was positively proof against its two worst enemies. They have seen that wherever fire touched stone, granite, marble or concrete, that material has gone completely to pieces or been spalled and cruelly defaced; they have seen that where their face brick was properly bonded to the backing and the entire wall well tied to its frame, that wall is as good to-day as it ever was; that where common brickwork was well done, with good mortar and ample bonding, and even unstiffened by steel frame, as in the Palace Hotel and some of the big churches in the burned district, it has valiantly withstood quake and fire and even dynamite; that where terra cotta decoration was used with discretion, all the surface part of equal thickness, properly planned and with rounded internal angles, and all tied in safe and sound, it has remained so; that where the fireproofing



SAN FRANCISCO GAS AND ELECTRIC BLDG.
Stone badly spalled, interior completely gutted, but
brickwork perfect.



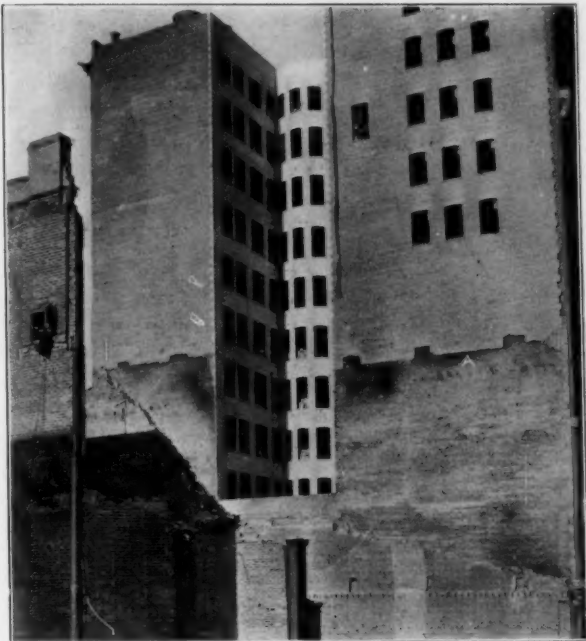
MILLS BUILDING.
Stonework A A badly spalled, while the upper eight
stories of brick and terra cotta are intact
save at a few spots like B.



MUTUAL SAVINGS BANK.
Stonework A B D destroyed, terra cotta gables
above intact.

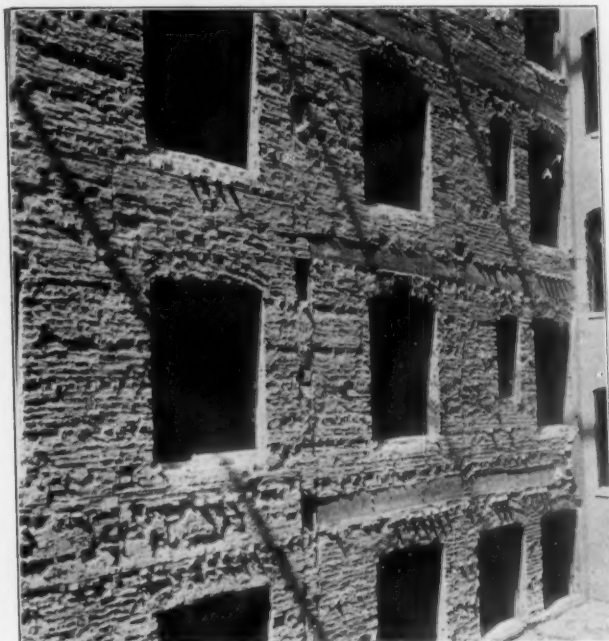


CALL BUILDING.
Note effect of fire on stonework at A B, and that
terra cotta dome C is undamaged.



SHREVE BUILDING.

Fire was hot enough to destroy adjoining buildings at A, but side and court walls are intact and unshaken.

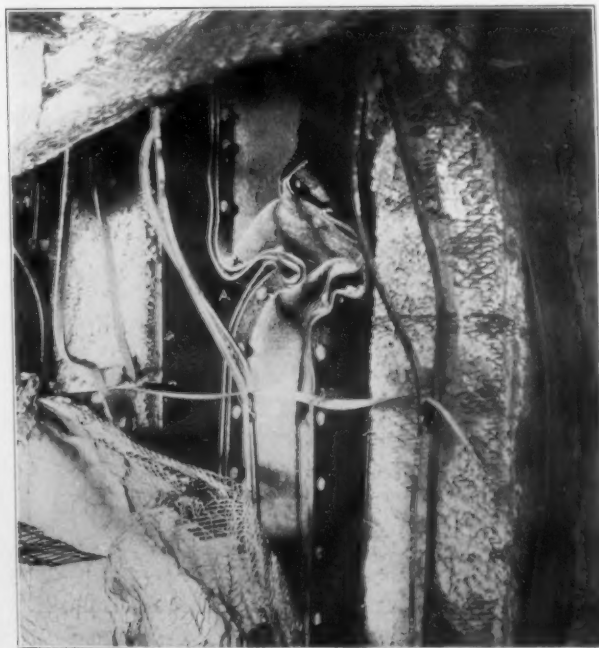


ST. FRANCIS HOTEL.

Court walls, work poorly done and facing A B not bonded to backing. Quake and fire have revealed that neglect.



Poorly set column protection, and with pipes *inside* of casting, in one of the so-called "tile fireproof" buildings. Note fire effect on column at A.



Poorly applied column protection in a so-called "concrete fireproofed" building. Note fire effect on column at A.



ARONSON BUILDING.

Stone spalled at C, terra cotta base "quaked" at E, but rest of terra cotta and brick perfect.
See metal cornice.



UNION TRUST BUILDING.

Wherever fire touched it, as at A, there is an ineffaceable mark: not so with the brick and terra cotta above.



MUTUAL LIFE BUILDING.

Note stone at A B and condition of brick immediately above. Intense fire in building C. (D D present offices and restaurants.)



WEST GATE APARTMENTS.

Stonework A completely demoralized, also metal cornice D. Enameled brick, well laid, exposed to equal fire and unmarred.

tile was ample in dimension, properly bonded, laid with cement mortar and rigidly tied to the columns, or set in place (the partitions not built up on top of finished wood floors or of inferior concrete with wood floor strips) it amply protected the steel frame and is in itself intact; that where stairs and elevator shafts were enclosed, or a building cut up into small units of properly enclosed spaces, fire was confined to limited areas and did but little damage; that where internal decorations, doors, trim, etc., were of metal, as in the Kohl Building, all that decoration remains intact, and in itself prevented the spread of fire from room to room; that where metallic furniture and cases were used in rooms enclosed with fireproofing tile and windows properly protected, all books and papers were intact; that where even a wooden frame building was enclosed with brick walls and the window openings protected (by wired glass in metal sash) against external attack, as in the California Electric Supply Building, even the wood framing and all the contents of the building were absolutely safe and untouched, though an exactly similar building, save that it had no protection to its windows, situated but a few blocks away, lost its "slow-burning frame" and all its contents in less than forty minutes' time.

They have seen all this, I say; they have before them various object lessons of the different parts and details that have done their several individual duties well. Now, then, in heaven's name! have they not intelligence enough to assemble all those details into one structure and make it a really "fireproof" building?

STUDYING THE EARTHQUAKE.

IMPORTANT WORK OF GEOLOGICAL SURVEY.

IMPORTANT to builders throughout the country is an investigation recently begun by the United States Geological Survey to find out the effect upon various kinds of structural material of earthquakes. Numerous inquiries have been received by Charles D. Walcott, director of the Survey, since the California earthquake as to the buildings which best stood the shock of that catastrophe and the reasons why some buildings survived and others fell in the wake of this convulsion of the earth. Interesting light on this phase of the earthquake was thrown by a letter recently received at the Survey from Charles G. Yale, who is the special geological survey agent on the Pacific Coast. Mr. Yale was in San Francisco at the time of the earthquake, and therefore had excellent opportunities for studying its effect. His offices are located in the Appraisers building. This building, Mr. Yale says, in his letter to Director Walcott, was one of the few business structures in San Francisco which was not injured either by the earthquake or the fire. With the exception of the falling of a little plaster on several floors the building is wholly free from damage. "It is probably the only building of its kind in the city," said Mr. Yale, "which does not show a single crack in its brick walls. This may be due to the fact that the foundation of the building consists of a six-foot bed of solid cement placed upon thousands of piles, and that the bricks are put together with cement instead of mortar. The walls of this building are thicker below the sidewalk than they are above. Thus when the building is shaken by an earthquake it moves as a monolith.

Study in Paris.

BY GILBERT HINDERMYER.

SO widespread is the fame of L'Ecole des Beaux Arts that the name itself has become almost synonymous with study in Paris. Presumably every architect and most laymen possess enough general knowledge of this great art school and sufficient understanding of its purpose, principles and achievements to make unnecessary detailed description of the institution which France proudly opens to the world. In choosing how he shall study, the prestige, reputation and influence of the school make it a factor which the student must reckon with first.

But all who go to Paris for study do not intend to enter the school. While many regard L'Ecole des Beaux Arts as the Temple of Architecture and accept its teachings as the Bible of the architect, others again are not so sure. To be an apostle of the school, its methods and results, is to be called Frenchman; to say the education of the architect may be completed just as well and more quickly outside the school is to chance the reputation of seeking less than the best. Evading a point of view so radical as either may lend interest to comment upon both, since the spectator sees more of the game than the players, and observation from the outside adds poise to judgment. Naturally, then, the first decision for the student of architecture is whether or not he shall try to enter the school, and what he shall do as an alternative if he stay out. Regarding the former, inquiring minds will gather a kind of parallel column arrangement of ideas something like this:

Perhaps a *diplome* from L'Ecole des Beaux Arts seems desirable as a guarantee of training which many do not hesitate to call the best. The cultured mind and varied information of the technical school graduate are theoretically taken for granted; the self-taught man is often required to prove both. But to the man of affairs who aims for results regardless of method and prefers practice to theory, the *diplome* may mean nothing. There will always be those who ask, "Is it commercially good?" The full course of the school is long, depending upon a certain aggregate of "values" practically impossible to complete in less than three years, usually more. This, following upon a regular or special college course or some years of office training, means the expenditure of much valuable time. However, one may give up the *diplome*, omit values in other branches and devote himself principally to architecture. Completing the full course will insure a training in theory as perfect as may be. If too much of theory and too little of the practical seem evident, still the honor, distinction and prestige of the *diplome* are the rewards; the practical application rests with the finished student. Should some studies in which values are required appear useless in office practice, it is to be remembered that the ideally trained architect recognizes few studies which are useless in his profession. Perhaps the school principles of plan and design seem too obviously French in point of view rather than applicable to American conditions; it is claimed that these ideas are taught as principles so broad and fundamental as to be of general application.

If the student arrive in Paris less inclined to sober analysis, have the time, money and be not too old, he will probably try the entrance examinations, as the enthusiasm born of discussion among the many candidates is contagious. Unless one's age be a year or two less than thirty the choice is spared him, as the French government decrees that none may remain a student of L'Ecole — much less enter — whom French standards judge thus conspicuously superannuated.

The examinations are commonly believed to be difficult, covering a wide range of questions in history, oral and written mathematics, geometry, a twelve-hour solution of a problem in architecture and a study in free-hand rendering. The problem in architecture counts most. Preparatory ateliers conducted for this purpose are ever ready to teach the special points expected from the applicant in his sketch. While in no wise detracting from the glory of those who have passed the ordeal in triumph, nor lacking sympathy for those laid low, the average of opinion indicates that a college graduate with a proportionate knowledge of architecture should scarcely find these examinations filled with the terrors from which it is commonly supposed they are inseparable. Much of the difficulty naturally results from an insufficient knowledge of French. Only a little knowledge is often said to be enough; but it is well to remember, in general, that a fair proficiency in America seems a little knowledge in Paris. As always, a cool head, an even poise, steady nerves and the ability to enter in good condition after weeks of coaching and fearsome comment — coupled with the ability to produce what one knows at the right moment, rather than any unusual or specialized erudition — seem the qualities which win.

Should the weight of opinion thus far seem in favor of the school, there may be enough of importance to more than keep the balance true in considering the alternatives for him who stays out. The student who decides to omit the school, either through necessity or merely from choice, will find other opportunities for study, much in line with the work of the school and free from most of its hindrances. *Diplomes* or graduates of the school may always be had to give programmes, guide and criticise individual work at regular times, and to act as "coach" generally, for fees which are not excessive. There are ateliers where one may work from the cast or from the figure, draped or nude, every day and every evening for a trifling sum paid upon each admission. There are clever men who teach water color, though this, perhaps, belongs more in the province of the painter, whose methods of study touch but never coincide with those of the architect. There are the school exhibitions of every required sketch, problem and project, valued by the judges and open to all for study and comparison. The competition for the "Grand Prix" — four years in the Villa Medici, at Rome — is the most important event of the student year. The various solutions and the drawings are much discussed in preparation, and the finished results exhibited in June. Lesser competitions are distributed through the year. Students of the school are all about one, ready and anxious to discuss questions, criticise each solution of every problem, and to impart the school's methods and point of view. Easily obtained

are the programmes of old and current projects which one may solve for himself. There are always students more than willing to offer a twelve-hour sketch, to be worked up into the required drawings, by good men who care to do it for the monthly judging and exhibition.

Also to be numbered among one's opportunities are the big ateliers, although more properly belonging to the organized work of the school, since they are the workshops in which school drawings are supposed to be made. One must picture each as a brotherhood of students, mutually helpful, working side by side upon similar problems. Each atelier bears the name and is under the guidance of its "patron," — an architect whose individuality, methods and point of view influence his pupils, as they profit by his criticisms. If one has "made the school" he cannot do otherwise than join an atelier. Those of Laloux, Redan and Pascal are probably the more prominent, though there are others perhaps equally good. Though not a student of the school, one may become a member of an atelier. He may work upon the school projects, though without opportunity of having them judged and hung. He will come in contact with the very cream of draughtsmanship, learn many tricks of rendering, doubtless have numerous opportunities to work on the problems of his "brothers" urged upon him, and, if he be clever himself, may even help to win honor and fame for a Grand Prix man. The work of advanced students, "L'Ecole" to the finger tips is to be studied in varied solutions of the same problem. His own project appears before him in many versions.

A word of caution may not be amiss to him who contemplates spending his time of study in an atelier. If that time be short and the student not a pupil of the school, he should learn more than a little of what awaits him. The "Nouveau" does not rest upon a bed of roses: his term of service is proportioned to the length of his stay — and "service" means service. Initiation is no meaningless term, but represents the condensed ingenuity of years of study and demands that nerves and temper be at their best. Five minutes of criticism, given three times a week, are all the Nouveau may hope for from Monsieur Le Patron. Here the merry *blague* exists in a high state of development: not merely the by-product of active brains, but the work of specialized invention. Knowledge of the atelier had best be sought from the outside until initiation makes the seeker for truth free to pass its doors. One will find a lot of fun in atelier work, and doubtless may learn a great deal.

He who believes that an influence something more than name exists in an "atmosphere of art" will find that something in Paris, whether he seek it in the orthodox ranks of L'Ecole des Beaux Arts or as a free lance among the army of students in the Quartier Latin.

If one study even a little and but live there open eyed and open minded, with an understanding appreciation for the beauty of art in design displayed broadcast through a beautiful city, he can scarcely come away unrewarded by his stay in Paris.

A Village Courthouse.

ARTICLE III.

BY ALBERT RANDOLPH ROSS.

NOT long since, being interested in the erection of a public library in a small New England town, I was asked by the committee who had the matter in hand to make sketches for a contemplated county courthouse, a site for which had been acquired facing the public square, the civic center of the town, which was the county seat. The village was of some historical interest and significance; the first company of soldiers in the Revolution having assembled and departed from its square, and it was, too, an altogether pleasing place, especially in the spring and early summer when I first saw it.

The square, a plot of ground some six hundred feet by seven hundred feet, was surrounded by a line of venerable elm trees no doubt a hundred years old or more, and was parked out in grass plots and gravel cross walks. In the center was a flat basin of water with an invisible central outlet, which on certain occasions sent a column of water into the air, splashing back into the pool. At one side was the proverbial granite horse trough with its well-worn granite buffers and hitching posts, and across the street the village inn, a wooden building of the Colonial times with a big piazza, where farmers smoked and talked crops after their midday meal. On the side of the square opposite was the village main street, with its interurban trolley line and nondescript buildings of business, stores, offices, a bank, etc., and, as they faced north and were in shadow, their glaring lack of architectural design was not offensive from a little distance. The public library was placed at one side and the courthouse was to face it, opposite.

The building committee, why selected I don't know, as they seemed utterly unqualified for the work, was composed of two farmers from outlying districts and a retired plumber. The plumber no doubt was thought to possess the necessary technical knowledge to guide them in their undertaking.

I found, however, on attending their regular monthly meeting to discuss requirements, that I had very much mistaken the situation. The county collector was present, an energetic man with a head like the late Matthew Quay or Cecil Rhodes, who at once arrested attention, and it was plain to see that the committee of farmers were under complete domination and entirely directed by this man. As a matter of fact he was the committee himself, and as it transpired was certainly well equipped for the position. He had experience in the erection of public buildings and had given the matter considerable study. He had visited the principal municipal buildings the world over, was just, honest, and had the interests of the county at heart.

The farmer members had also given the matter study according to their lights, and arrived at some strong convictions as to what a county courthouse should be. They had taken sundry trips of inspection of such buildings at the county's expense and got together a collection of prints, plans and photographs, most of them of buildings from the middle and southwestern states.

Their chief conclusions were that the building should have a rotunda, dome and portico; the arrangement of rooms, their sizes and other matters, seemed to them of secondary importance. They were of the opinion, too, that it should be built of rock face granite. They knew that the amount of the appropriation would not permit the dome which they had in mind being constructed of granite, but galvanized iron, painted and sanded, would answer so they argued, as from the ground the difference of material would not be noticeable.

This was the opinion also of a warm personal friend whom they believed competent to pass judgment, — the owner of the near by granite quarry, who had, indeed, accompanied them upon some of their excursions of study.

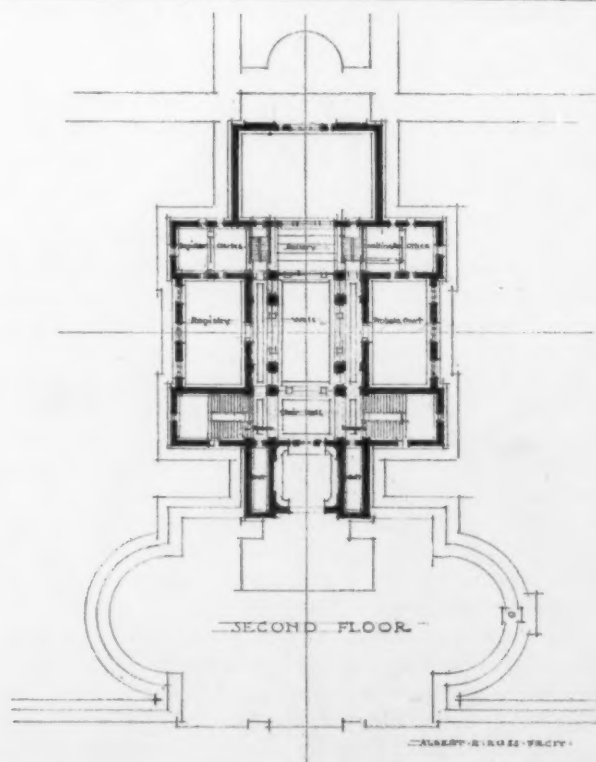
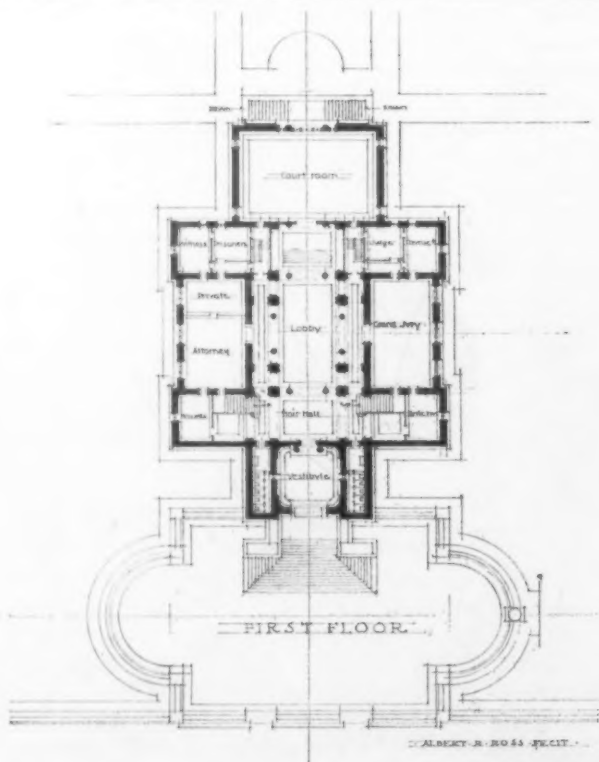
While there was no question as to the advisability and necessity of a rotunda or lobby, I questioned the appropriateness of a dome, and suggested the omission of this feature of the design, getting the impressiveness which they desired rather by a fine entrance portico and pediment, and suggested that a dome would be of little use within and that its cost might be better put to other uses.

To my surprise the county collector agreed; he questioned the fitness of a dome for such a building, and although he was forced to admit the domes on the county courthouses which they had collected, he called attention to other better precedents, among them, to my delight, the Palais-du-justice in Paris, which had impressed him as characteristic and appropriate to the purpose of such a building; and further he argued that the funds would not permit of a dome properly constructed, and that the flag pole which was to be placed on its top might be more in evidence if put at the end of an exedra in front of the building at the ground level. The dome feature was therefore finally waived, provided a sufficient impressiveness could be got from the main entrance motif.

The sizes and disposition of rooms, height and number of stories, were soon settled. The principal courtroom was to be placed at the rear of the building facing the main entrance, the grand jury room and anteroom at the right; rooms for the district attorney, prisoners, witnesses, etc., at the left, on the main floor, with separate entrances at the rear for the use of the judge, counsel, and warden; and the probate court, private office, registry of deeds, private offices for registrar and clerks, on the second floor. Public stairways were to be placed at either side of the building toward the front; the main courtroom was to extend through two stories, with a balcony at the level of the second story; the basement was to be given over to rooms for storage, vaults for records, space for heating and ventilating apparatus, and janitor's quarters.

These suggestions formed the basis of a set of sketch plans and a perspective which were finally satisfactory, although I had an inkling that the committee still hankered for the dome feature; and we got our granite quarry friend to make an estimate of its cost.

Of course it was expected the estimate would be tentative, but we were by no means prepared for one that was more than twice the appropriation. It certainly was not justified by the sketches. The contractor seemed to



A VILLAGE COURTHOUSE.
Albert Randolph Ross, Architect.

think that the work was to be his at any cost, and doubtless intended to retire from business on its profits.

Alternatives were suggested, to be sure, which tended to somewhat reduce the estimate, — omitting the front columns; reducing the thickness of the ashlar; making the back of the building of brick (which would not be considered).

More estimates were got from other contractors, which only proved, however, that the building could not be erected in granite, not even in rock face granite, within the appropriation, and a way out of the difficulty was, as usual, left to the architect to find.

On considering other material, limestone naturally suggested itself, but was rejected on account of excessive cost of freight, and terra cotta or terra cotta and brick was, I am glad to say, finally considered.

I have always had a strong partiality for this beautiful material; its beauty is hardly rivaled by marble, and its texture, color, susceptibility of ornament, and fire-proof qualities lend themselves especially to a building situated as this one, in a small town surrounded by ample foliage and lawn.

After some further discussion of possible material, — reinforced concrete, etc., — it was decided to adopt a light colored pressed brick and terra cotta. I then suggested omitting the columns of the portico, believing the beauty of a free-standing column being in the perfection of its vertical tapering curve, or entices, which is impracticable in terra cotta on account of warping consequent to burning, unless it is broken in some way, by rustication for instance, which did not seem appropriate. A motif of an arch, pediment and flanking piers and vestibule was substituted, with the endeavor to still obtain the same desired expression of the dignity of the courts contained in the building as was given by the portico, and a design which would permit of an appropriate and fitting use of the material.

Hence these little sketches, on which satisfactory estimates were got, of a county courthouse facing the civic center of a small town; to be built of brick and terra cotta with fireproof floors and roof, a granite base and steps, and, in design, based upon an adaptation of Roman classic, which seems to be an accepted style for American municipal buildings.

"DISHONEST mortar — a corrupt conglomeration of sea sand and lime," is the explanation given by a Japanese architect for nearly all of the earthquake damage in San Francisco. Dr. Nakamura was sent over by his government to investigate the recent disaster, but from his quoted comments on what he has seen it is evident that he thinks he has learned nothing except the things not to do in an earthquake country. At home, he says, there is no lack of confidence in brick buildings, though Japan has many earthquakes more severe than the one which caused, or started, the destruction of San Francisco, but the secret of safety is the use of good mortar. It is undoubtedly true that American builders use a vast amount of mortar ranging from indifferent to bad. This is perfectly well known to everybody with any knowledge at all on the subject who watches the construction of our houses and observes the quality of the sand and the small proportion of lime that is mixed with it.

West End Houses, London.

BY R. RANDAL PHILLIPS.

THE briefest inquiry into the planning of the older town houses, and the provisions made in them for the needs of the occupants, will at once reveal how the antiquated idea of having a great show for the guests at the expense of the host still held sway, and it will also be noticed what meager accommodation was provided for the numerous servants on whom the work of the house devolved. It is curious to note, moreover, how our grandfathers seem to have been oblivious of the fact that proper service between kitchen and dining room is impossible when the two are widely separated by corridors and stairs.

Another important detail is the hall; this, in fact, may be regarded as the ruling factor in the planning, because in town houses where receptions are frequent ample hall space must be provided in one form or another. Oftentimes the hall is made into an open room with fireplace, — quite a different thing to a mere passageway, — and undoubtedly this is the best arrangement that can be followed, provided there is sufficient space to allow it to be done. Space, however, is generally the great scarcity in these town houses, for sites are very costly in the West End, and the architect needs all his ingenuity to contrive to get the largest possible rooms on what is really a narrow frontage, at the same time providing a commodious hall and a dignified staircase leading out of it. The general requirements of these London houses are as follows: On the ground floor (or the first floor, as it is called in America), dining room, morning room and possibly a library or billiard room, with lavatory; on the first floor, drawing room or rooms, as may be required, or a single drawing room with boudoir leading out of it, and guests' bedroom with bathroom; on the second floor, the bedrooms of the heads of the family, comprising one large bedroom, bathroom and one or two smaller bedrooms; on the third floor other bedrooms for the family (special provision having to be made if there are children); and finally, on the fourth floor, the servants' bedrooms, box room, etc.; the kitchen offices being arranged in the basement.

Turning now to the exterior, it would be futile to describe even a tithe of the many treatments to be seen. The accompanying illustrations, however, serve to show what modern architects have done and are doing in the West End. Going back a few years we come across many delightful examples of brickwork by Norman Shaw; his houses in Queen's Gate, for example, or the one in Cadogan Square, Chelsea. In Mr. Shaw's houses we may trace many moods and manners, but they are always distinct and refined, full of vigor and free from conventionality. As a corner treatment, No. 180 Queen's Gate is particularly good. Ernest George, too, is another great builder of brick houses, albeit his work smacks of the Continental sketchbook; but no one will dispute the cleverness with which he introduces Flemish motives into a London building, as, for example, in the houses in Harrington Gardens. Mr. Flockhart's work is somewhat uneven; still, as representative of another class of West End house, No. 2 Palace Court, Bayswater, is well



LORD WINDSOR'S HOUSE, 54 MOUNT STREET.
Fairfax B. Wade, Architect.



NO. 180 QUEEN'S STREET.
Norman Shaw, Architect.



THE YELLOW HOUSE, BAYSWATER HILL.
Built of Yellow Terra Cotta.
Ernest George, Architect.



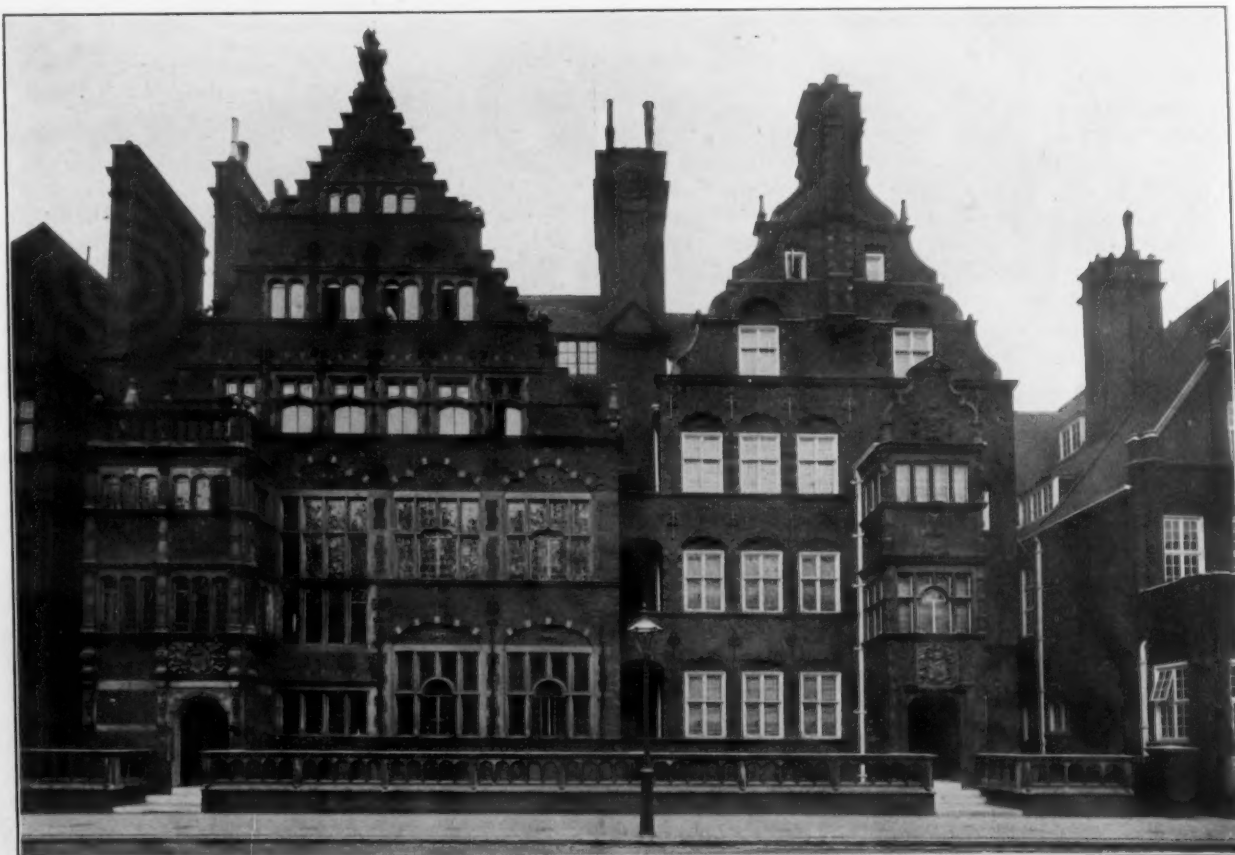
HOUSES IN HARRINGTON GARDENS.
Ernest George & Peto, Architects.



NOS. 18 AND 19 COLLINGHAM GARDENS, EARL'S COURT.
Ernest George & Peto, Architects.



NOS. 10 AND 12 PALACE COURT, BAYSWATER.
J. M. Maclaren, Architect.



HOUSES IN HARRINGTON GARDENS.
Ernest George & Peto, Architects.



HOUSES IN HANS ROAD, CHELSEA.
HOUSES AT LEFT. C. F. A. Voysey, Architect
HOUSE AT RIGHT. Mr. Macmurdo, Architect.



LORD RIBBLESDALE'S HOUSE, GREEN STREET.
Sidney R. J. Smith, Architect.



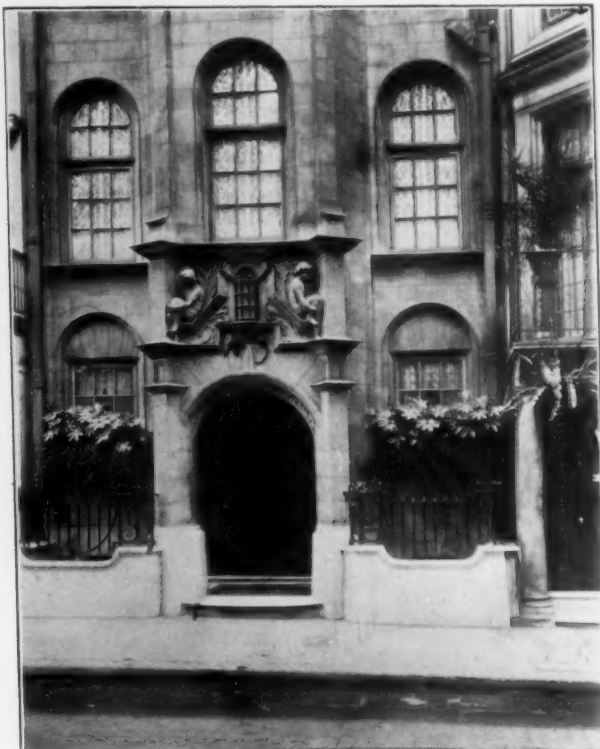
THE DUKE OF MARLBOROUGH'S NEW HOUSE, CURZON STREET.
Romaine-Walker & Besant, Architects.



HOUSE AT CORNER HARLEY ST. AND QUEEN ANNE ST.
Professor Beresford Pite, Architect.



NO. 30 CHARLES STREET.



NO. 3 BERKELEY STREET.
H. Huntly-Gordon, Architect.



NO. 16 CHARLES STREET.



OLD SWAN HOUSE, CHELSEA, S. W.

included in the present collection.

A very notable West End house, as a piece of architecture, is the block in Palace Court by the late Mr. Maclaren,—an architect who died when only half his work was done.

Chelsea has been a great place of rebuilding within recent years. There are many fine new houses facing the Embankment, and a great scheme was carried out close by for a veritable colony of mansions. As a whole they are not remarkable for any excellence of architectural quality, nevertheless there is a spacious air about them.

In one of the roads on the estate, Hans Road, is to be found an unusual example, namely, of two houses by Mr. Voysey, who has here made an excursion in town design on the same lines as his country work; there were to have been four of these houses, but two only were built; next door is a house by Mr. Macmurdo, a capable architect, who has designed a goodly number of West End houses.

In the streets leading off Park Lane numerous houses for the nobility have been erected, prominent among them being Lord Windsor's in Mount Street, and Lord Ribblesdale's in Green Street. Both are well designed, but the former is quite the better of the two. Another important new mansion is that in Curzon Street for the Duke of Marlborough. This is clearly French in much of its detail; but however common it may be to find good, modern, classic work in American cities, it certainly is not so in English ones, and we must therefore be grateful to Mr. Romaine Walker for this sturdy block. One or two doorways in Charles Street, close by, are worthy of notice, — Nos. 16 and 30, here shown.

Finally, going somewhat nearer in, we find a number of excellent new houses in Harley Street and its neighborhood, though these are so many "slips" between dull houses of an older time; more particularly in this district there are the two houses by Prof. Beresford Pite, one at the corner of Harley Street and Queen Anne Street, and the other in Mortimer Street. Professor Pite is always unusual. Sometimes his novelties or importations are not altogether happy—witness the front to Christ Church, Brixton—but in these two town houses he has displayed his skill to good effect, embracing sculpture and low-relief carving in his designs. They are full of new detail and fresh treatments, and in thus briefly alluding to them as the work of one of the most capable of English architects these few notes on West End houses may fittingly be brought to a close.



NO. 82 MORTIMER STREET.
Prof. Beresford Pite, Architect.

The Village Railway Station. I.

BY CHRISTIAN MORGENSTIERNE.

IN most suburban towns or villages the station has, and makes for itself, the most important position of any of the public buildings. Aside from its value as civic beauty, a small park has been found to greatly increase the intrinsic value of railroad properties and often develops into a civic center of a small town.

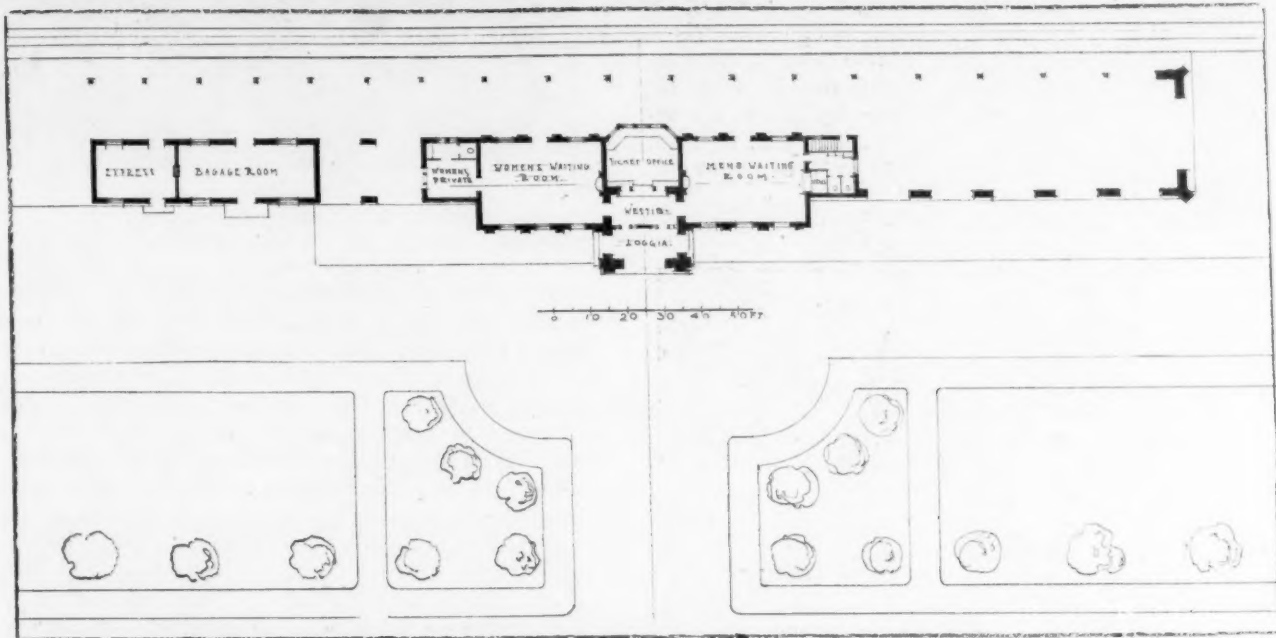
In the accompanying sketch the station is placed close to a public square surrounded by a large park, which is intended to be the pride of this little community. The public buildings previously published in *THE BRICKBUILDER* we will suppose are already placed facing this square and park. The passengers arriving at the station in carriages, etc., are driven to the covered loggia (on the town side away from the trains and foot passengers), and on entering directly face the ticket office, which is, as it should be, in a most prominent location. To the left is the women's room and to the right the men's. This system of dividing the station into two parts has this advantage, viz., that the men's room will be used by the smokers, and being a large room of importance it will of necessity be kept clean and provided with ample ventilation. As will be seen, a small private rest room is arranged for the women, with toilet room adjacent. This room should be decorated in such a manner as to make it restful and attractive, and should be supplied with one or two couches and comfortable chairs.

It is always advisable to project the ticket office towards the tracks in some sort of a bay window, so as to give the operator a view of all trains and as much of the platform as is possible.

The cutting of the station into two parts, as is done here, gives up the large airy general waiting room advocated by many of the roads. Arranged with the ticket office at one end and the drinking fountain at the other, it is much more desirable for larger towns and cities, and under special conditions necessitating larger women's and men's rooms, and will therefore take proportionately more ground than the plan here submitted. As a further objection the large waiting room usually allows for only a small smoking room, which is always objectionable.

The platform, covered with flat or very slightly pitched roof, has this great advantage, that it can be received on a broad transom bar, allowing the upper part of all openings to admit direct light into the waiting rooms. It has been found that platforms should hardly ever be less than sixteen feet wide and wider if possible. A train order room is only introduced where same is needed, being usually at division points, but does not often occur in ordinary suburban or village stations. The baggage and express rooms are placed as may be desired, more often combined in one rather than as here shown, and always of sizes determined by the amount of traffic and local conditions, there being no rule for their area.

The design of this station calls for a deep red paving brick (or its equal) with terra cotta trimmings and a soft green tile roof. In the interior all the rooms are to have tile floors except the ticket office. The baggage and



A VILLAGE RAILWAY STATION.
Christian Morgenstierne, Architect.

express rooms will have brick or concrete floors. The walls of waiting rooms and entry will be of semi-glazed terra cotta from floor up to the spring line of the arched openings, and above this line of plaster. The ceiling will be a plaster vault with delicately molded ribs.

A drinking fountain will be built into wall, to be made of white tile tied to the walls with colored tile faience running around the entire room as a border.

For a larger city station, or one used exclusively for the manufacturing districts, tile finish is the most durable, being, when properly designed and executed, dust and dirt proof.



Tiles may have both pattern and color, which if restrained will add a life and charm to our village railway station in sharp contrast to the dinginess of the great majority of those now extant.

Hardy shrubs and decorative trees shall be planted in the parkway near the station; bright coarse sand shall cover the walks, for it is our desire that this gateway to our homes shall be made simply attractive without being gaudy, bespeaking the traits of the townspeople, who, although not far removed from the hustle of a great civic center, are yet enabled to lead for at least a portion of each day the simple life.

abled to lead for at least a portion of each day the simple life.

Editorial Comment and Selected Miscellany

THEATER FIRES.

IN most of our theaters a curtain of woven asbestos run in metal grooves is accepted as sufficient protection against the spread of fire. As a matter of probability no theater curtain of any sort could be depended upon for an extreme sudden emergency. Some of the experiments in this direction which have recently been conducted in Vienna are quite illuminating in their results. Of course the temporary theater in which the experiments were made of necessity could not reproduce all the conditions of an actual building, but they were nevertheless sufficiently close to practice to offer some fertile suggestions.

In the first experiment a fire was lighted on the stage,



✓ DETAIL OF THE NEW CHRISTIAN SCIENCE CHURCH, BOSTON.
Charles Brigham, Architect.
Roofs of Domes built of Architectural Terra Cotta made by Atlantic Terra Cotta Co.

the ordinary curtain dropped, the ventilators in the auditorium opened and those on the stage closed. In less than two minutes the curtain gave way, the entire theater was enveloped in flames and conditions created which would have been fatal to life. In a subsequent experiment the conditions were identical, except that an iron curtain was lowered. The reports do not concise the condition of the curtain after a few moments, but they do say that its protective powers proved quite illusory and the flames burst forth in the auditorium with greater violence, if possible, than before. It is practically impossible to construct an absolutely reliable fire curtain and to have it properly used as a guard in a sudden emergency. If actors were all willing to sacrifice themselves



HOUSE AT COLUMBUS, OHIO.

F. L. Packard, Architect.

Roofed with Old Shingle Tile made by Ludowici-Celadon Co.

for the sake of the audience, keeping the stage ventilators open and closing the fireproof curtain upon the appearance of the fire on the stage, the audience could undoubtedly be taken care of, but it would be expecting too much to suppose that any company of stage hands would so consent to shut themselves into a fiery furnace. We would not argue from this that fire curtains are of no value, but rather that they are of slight efficiency unless supplemented by a full equipment of sprinklers, automatic alarms and fire hose under the control of a trained fire department.

STRENGTH A FEATURE OF BUILDING LAWS.

THE San Francisco *Chronicle* reports the progress which is being made toward the elaboration of a new building law for the city of San Francisco. Of course it is hardly fair to judge of so technical a thing as the building law by any report which would come through the medium of the newspaper reporter, but the *Chronicle's* summary indicates, at least in a measure, how lax the laws in San Francisco must have been previous to the fire. The clauses in the proposed law which most interest the newspaper seem to be those relating to strength of material, but any educated architect or engineer reading these would see that they are simply a presentation of the requirements which have been enforced for years in most of our large cities. After all, what San Francisco



DETAIL BY JOHN E. KIRBY, ARCHITECT.
South Amboy Terra Cotta Co., Makers.



DETAIL BY GEORGE B. POST & SONS,
ARCHITECTS.

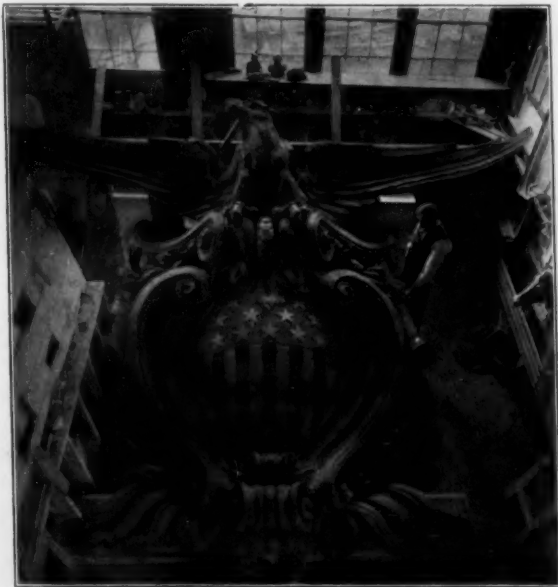
Perth Amboy Terra Cotta Co., Makers.

most needs is not mere strength for quiescent loads in buildings, but more rigid enforcement of laws relating to fireproofing and especially to lateral bracing.

HOTEL ALEXANDER, SAN FRANCISCO.

THE Hotel
Alexander
in San Francis-

co is a structure eleven stories high, with a frontage of only thirty-five feet, the narrow width corresponding with the direction in which it appears the greatest movement took place during the earthquake. One of the fronts is constructed of gray sandstone blocks. The other walls consist throughout of red brick, and the noticeable feature is that these walls are all carefully attached to the steel skeleton by anchor bolts carried through the wall with



DETAIL FOR AMERICAN TRUST AND SAVINGS BUILDING,
CHICAGO, ILLINOIS.

(Spread of Wings, Eighteen Feet.)

American Terra Cotta & Ceramic Co., Makers.

iron plates on the exterior face. This construction was barely completed at the time of the fire and apparently very little damage was done to it. Of course the finish was entirely destroyed by the fire, and the stone was slightly chipped in places about the openings, but as a structure it appears to be perfectly intact to-day. This is an illustration of the point upon which we have so frequently insisted, namely, that our knowledge of construction is to-day amply sufficient to permit us to erect build-



DETAIL OF PUBLIC LIBRARY, UNION HILL, N. J.

Albert R. Ross, Architect.

New York Architectural Terra Cotta Co., Makers.

ings of even more than usual height which shall be practically proof against destruction by fire or even by an earthquake similar to that which occurred in San Francisco. The difficulty is that we so seldom actually apply this knowledge in our construction. The fatal haste which is a ruination of all good construction impels most owners and builders to neglect those precautions which, while perhaps in a way extraordinary and intended to provide only against extreme perils, are nevertheless



DETAIL FOR NEW WAR COLLEGE, WASHINGTON, D. C.

McKim, Meade & White, Architects.

Brick, Terra Cotta & Tile Co., Makers.

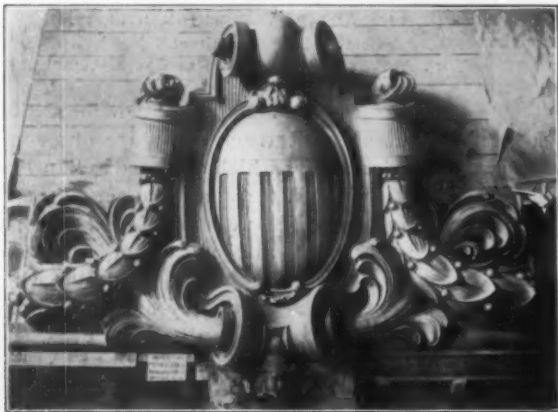


A PANEL IN FAIENCE TILES.
Made by Hartford Faience Co.

essential functions of a thoroughly well constructed modern building. The added cost of such thorough bonding and tying as was adopted in the Hotel Alexander is too inconsiderable to be thought of. The added security in the structure itself is, no doubt, fully appreciated now by the owners of this building.

STUDY OF THE ORDERS.

THIS book on the Orders consists of three of the regular instruction papers of the American School of Correspondence in Chicago, with the accompanying plates



TROPHY IN PARAPET.
Northwestern Terra Cotta Co., Makers.

which were prepared with the special purpose of giving the student a clear, concise description of the Orders and the system of proportions to which they were reduced by the Renaissance architects. The volume forms a very convenient reference book for any architectural draughtsman, and would prove of value to the architect in practice. Indeed, it would be a very excellent book to have in every draughting room. The illustrations are both from photographs and from drawings, and show the standard examples which are recognized as classic by architects everywhere. Some of the text is necessarily more or less dogmatic, as when it states that "the designing of buildings consists in a graphic representation of their intended

shapes and sizes," and that "an architect uses mechanical drawing to express his ideas;" but on the whole there is really very little to object to in the volume. The drawings are clean and clear and the text is quite free from superfluity. It is the best school work upon the subject which we have seen.

BUILDING OPERATIONS FOR MAY.

REPORTS from some fifty of the leading cities of the country, received by *The American Contractor*, New York, tabulated and compared with those of the corresponding month of last year, show that the building operations of May, 1906, fully justified the predictions made in their report. Two-thirds of the cities show an increase



DETAIL BY ST. LOUIS TERRA COTTA CO.
Root & Siemens, Architects.

over the operations of 1905. In Greater New York the gain is small, only one per cent, but this is a remarkable showing when the enormous, record-breaking business of last year, with which the comparison is made, is taken into account. Chicago breaks all its records with \$6,494,220, a gain of sixty per cent over May, 1905. The percentage of gain in other leading cities is as follows: Atlanta, 34; Bridgeport, 167; Buffalo, 60; Cleveland, 17; Duluth, 110; Harrisburg, 112; Louisville, 50; Nashville, 130; Newark, 26; New Orleans, 48; Omaha, 75; Philadelphia, 11; Portland, 307; St. Louis, 14; St. Paul 49; Seattle, 30; Syracuse, 34; Toledo, 93; Tacoma, 111; Wilkesbarre, 271. The following figures show the losses reported in leading cities: Cincinnati, 44; Denver, 26;



RAILROAD STATION, PINE LAWN, N. Y.
Palmer & Hornbostel, Architects.
Roofing Tile made by Cincinnati Roofing Tile and Terra Cotta Co.



UNITED STATES POST OFFICE, CHAMPAIGN, ILLINOIS.

James Knox Taylor, Architect.

Entire Trim made by the Excelsior Terra Cotta Co.



THE REPUBLIC BUILDING, CHICAGO.

Holabird & Roche, Architects.

Fireproofed throughout by National Fireproofing Co.

Indianapolis, 35;
Kansas City, 17;
Milwaukee, 23;
Minneapolis, 25;
Mobile, 67; New
Haven, 34. Some
of the cities show-
ing a loss have had
a building boom
for some years
past and dimin-
ished building was
almost a matter
of necessity. Tak-
en altogether, the
report is of a most
satisfactory and
encouraging char-
acter and leaves
no reason to doubt
but what the build-
ing operations of
the season now
fairly under way
will break all rec-
ords. This seems
all the more re-
markable when it
is understood that
both wages and
building materials
are now ruling
very high.



APARTMENT HOUSE, NEW YORK CITY.

Moore & Landsiedel, Architects.

Faced with Brick made by Kreischer Brick
Manufacturing Co.

ENAMELED BRICKS AND CLEAN FOOD.

THE "New York Model Plant," referred to in the report concerning the condition of the packing houses in Chicago, is the new abattoir located at 39th Street and 11th Avenue, Horgan & Slattery, architects. The report says: "The lower side walls are covered with white porcelain brick. When the slaughtering of each day is finished, water is turned on and in not more than fifteen minutes the room is so thoroughly cleansed that all perceptible odors and traces of the work are removed. . . . White porcelain lined bricks and curved tiles join floors and side-walls that no corners may retain dirt and refuse." The building of such a model plant was not the outcome of an *exposé*, but rather a rational treatment of a commercial problem by men who knew right from wrong. "Lined throughout with enameled brick" would be a good headline for advertising any packing plant. The bricks and special shapes employed in this model abattoir were furnished by the American Enameled Brick and Tile Company.



DETAIL BY GEORGE KIESTER, ARCHITECT.
Conkling-Armstrong Terra Cotta Co., Makers

IN GENERAL.

The new Carnegie Library at West Philadelphia, C. C. Zantlinger, architect, illustrated in *THE BRICKBUILDER* for May, was built above the base course of a dull finish white enameled terra cotta, closely resembling marble. The material was furnished by the Conkling-Armstrong Terra Cotta Company.

The new group of buildings being erected at Eddystone, Pa., for the Baldwin Locomotive Works, are of hollow tile fireproofing blocks.

Gladding, McBean & Co., San Francisco, whose offices

were destroyed by earthquake and fire, have relocated at 1611 Franklin Street, San Francisco.

The new Courthouse at Utica, N. Y., will be built of light gray Roman brick furnished by the Ohio Mining and Manufacturing Company.

The South Amboy Terra Cotta Company will supply their terra cotta for the new Mercantile Building, corner Fifth Avenue and 15th Street, New York City; also for the Roman Catholic Church at Wilkesbarre, Pa., Owen McGlynn, architect. Both glazed and colored terra cotta will be used in the church.

The Ludowici-Celadon Company, manufacturers of terra cotta roofing tiles, now have offices under direct management of their own experienced men in seven leading cities of the country: New York, Chicago, Cleveland, Philadelphia, Pittsburg, New Orleans and Denver. They also have agents in nearly all the other large cities.

The new group of buildings for the McDonald University, Montreal, will be roofed with a red Spanish interlocking tile, made by the Ludowici-Celadon Company. This is one of the largest roofing tile contracts ever let, requiring several thousand squares. The same company will furnish their Conosera tile for four of the new buildings composing the terminal of the Pennsylvania Railway Company at Washington.

HARVARD UNIVERSITY. LAWRENCE SCIENTIFIC SCHOOL
Department of Architecture and Landscape Architecture

Offers four-year programmes of courses leading to the degree of Bachelor of Science in ARCHITECTURE, and Bachelor of Science in LANDSCAPE ARCHITECTURE.

For information and for announcements, address the Secretary,
J. L. LOVE, 16 University Hall.

Cambridge, Mass.

AN ARCHITECT

Owning a prosperous business in one of the most delightful, promising and popular sections of the South, in a city of about sixty thousand people and the winter home of a numerous tourist population, desires a first-class man to run his business in his absence of a year or two abroad. Would sell the business outright or would form a partnership with the right man. Correspondence solicited.

Address "CX30," care *THE BRICKBUILDER*.

TO MANUFACTURERS, BUILDING MATERIAL MERCHANTS and others, wishing active, reliable representative in the San Francisco market, with large acquaintance among architects and property owners, Steel Frames, Cement, Fireproof Materials, Architectural Publications, Rolling Steel Doors, Iron Windows, Hard Wood Finish, Waterproof Materials, Building Trade Specialties. References. In reply please state clean-cut proposition and best terms. Address, A. E. ACKLOM, 2129 Eagle Avenue, Alameda, Cal.

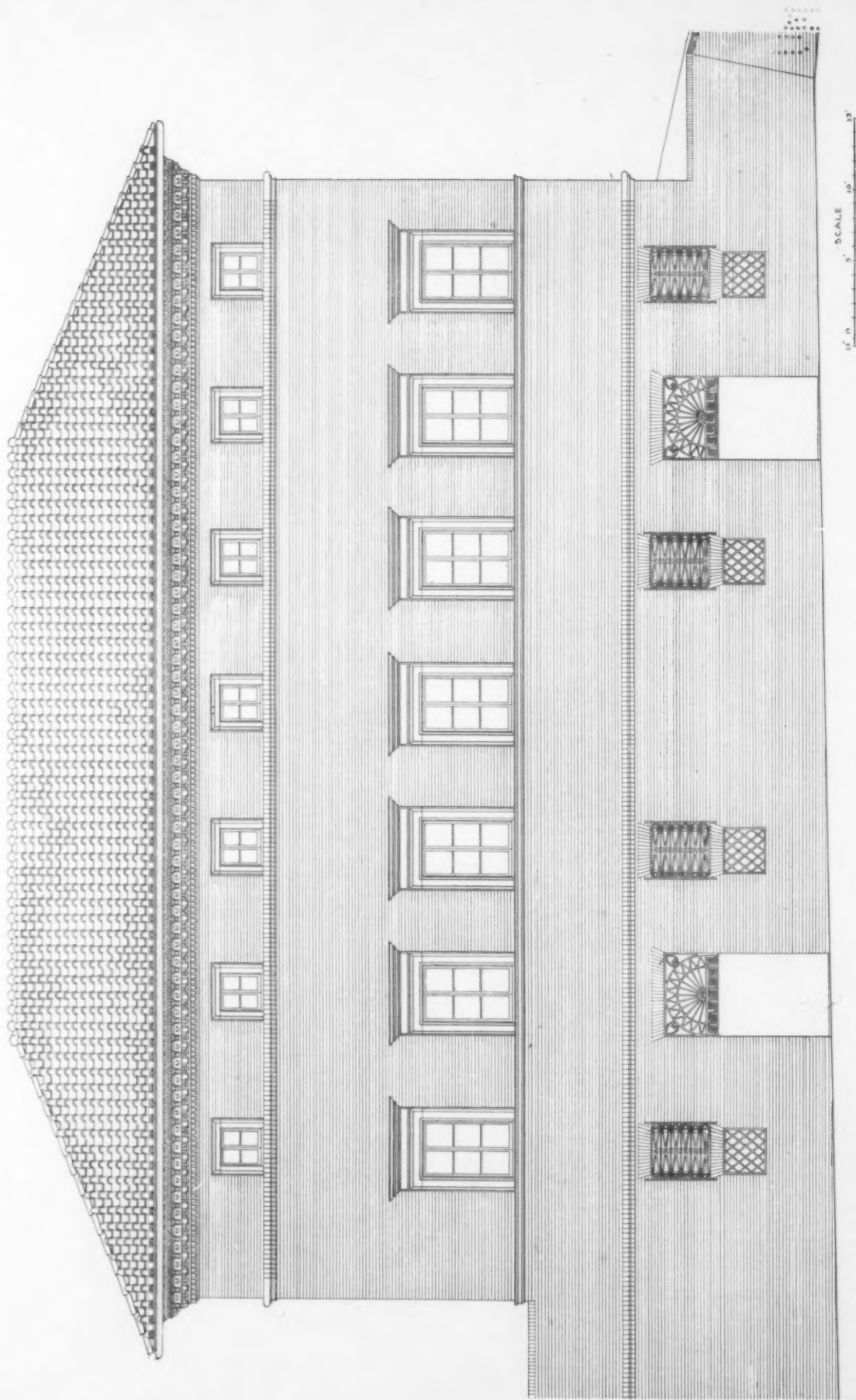
WANTED — Several competent architectural draughtsmen for positions in Chicago and middle West. Write, giving experience and references, G. Broes Van Dort & Co., 218 La Salle Street, Chicago, Illinois.



COLUMN.

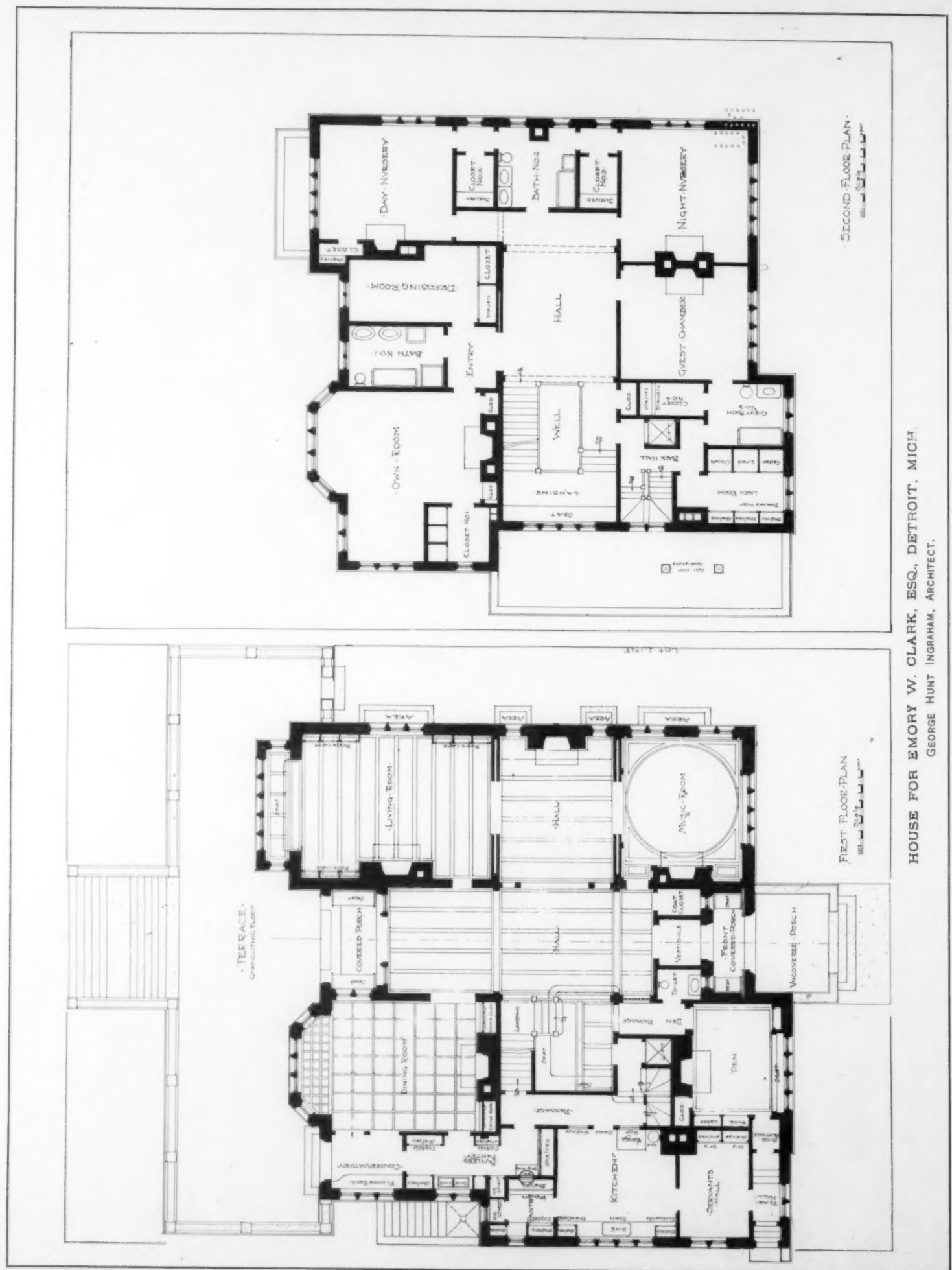
New Jersey Terra Cotta Co.,
Makers.

1000
1000
1000
1000



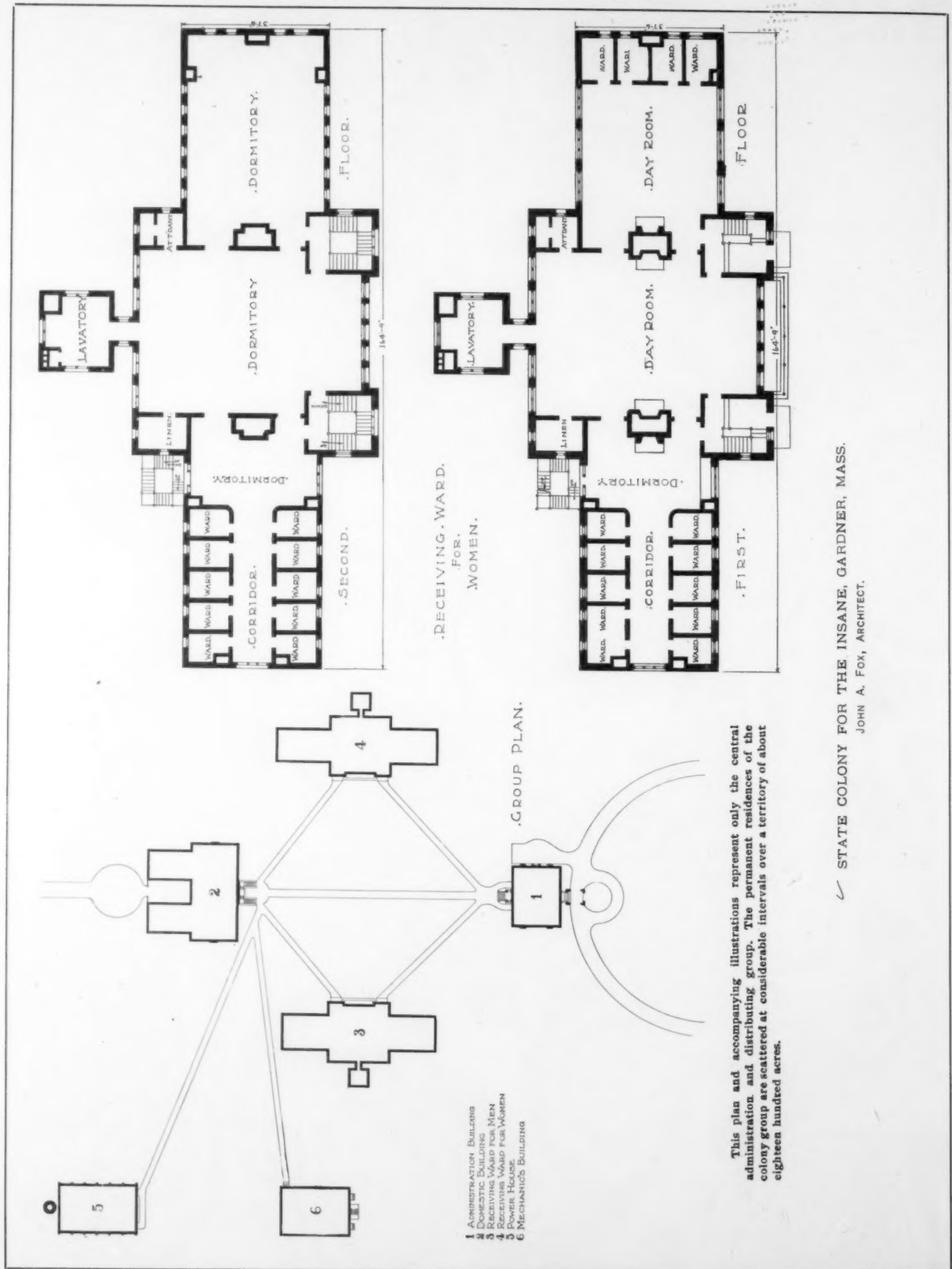
THE 'CASA POLLINI, SIENA, ITALY. A CLASSIC OF THE ITALIAN RENAISSANCE.
WILL S. ALDRICH, DEL.

1000
1000
1000
1000
1000



HOUSE FOR EMORY W. CLARK, ESQ., DETROIT, MICH.
GEORGE HUNT INGRAHAM, ARCHITECT.

11-10-11
11-10-11
11-10-11
11-10-11
11-10-11
11-10-11

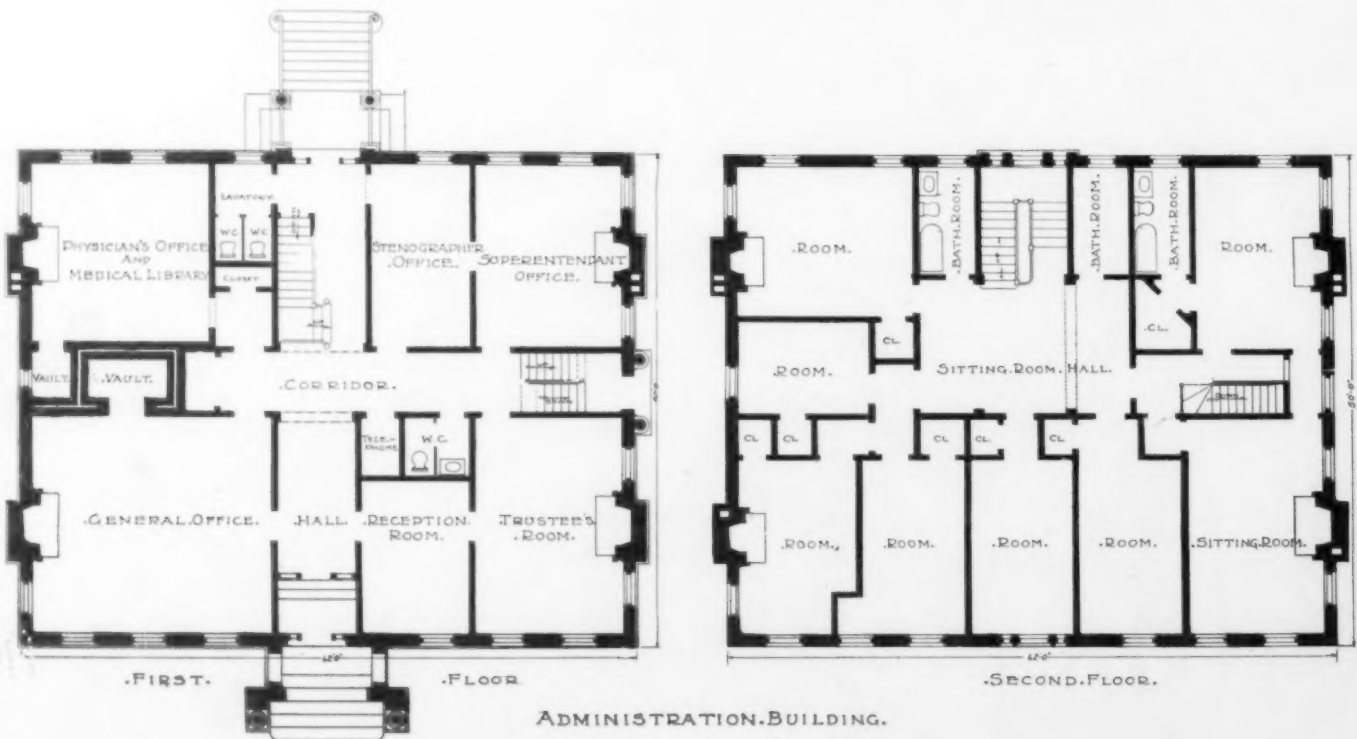


This plan and accompanying illustrations represent only the central administration and distributing group. The permanent residences of the colony group are scattered at considerable intervals over a territory of about eighteen hundred acres.

STATE COLONY FOR THE INSANE, GARDNER, MASS.
JOHN A. FOX, ARCHITECT.

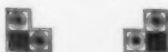


PLANS, DOMESTIC BUILDING.

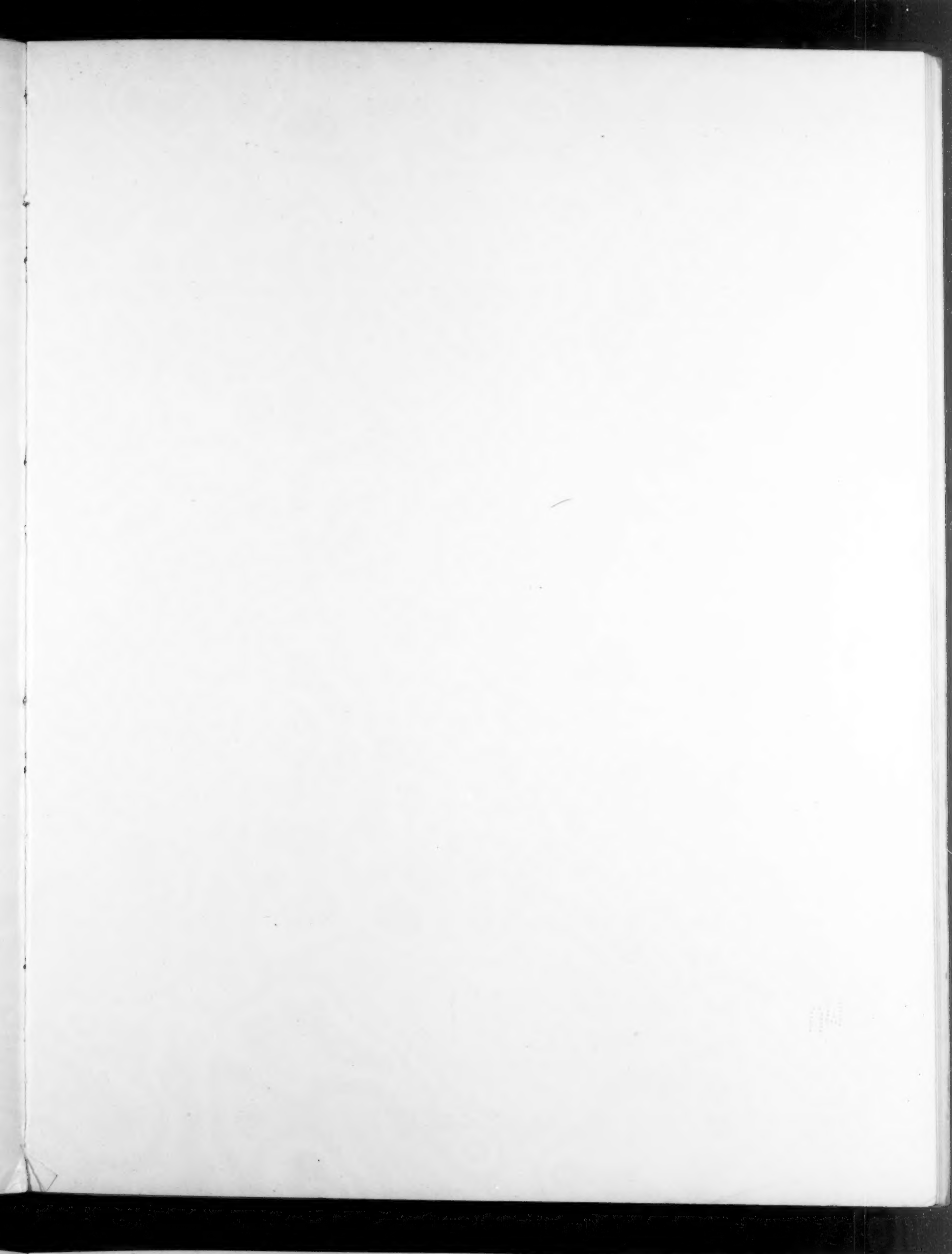


ADMINISTRATION BUILDING.

CARRIAGE PORCH.



STATE COLONY FOR THE INSANE, GARDNER, MASS.
JOHN A. FOX, ARCHITECT.





DOMESTIC BUILDING.

STATE COLONY FOR THE INSANE, GARDNER, MASS.

JOHN A. FOX, ARCHITECT.



ADMINISTRATION BUILDING.

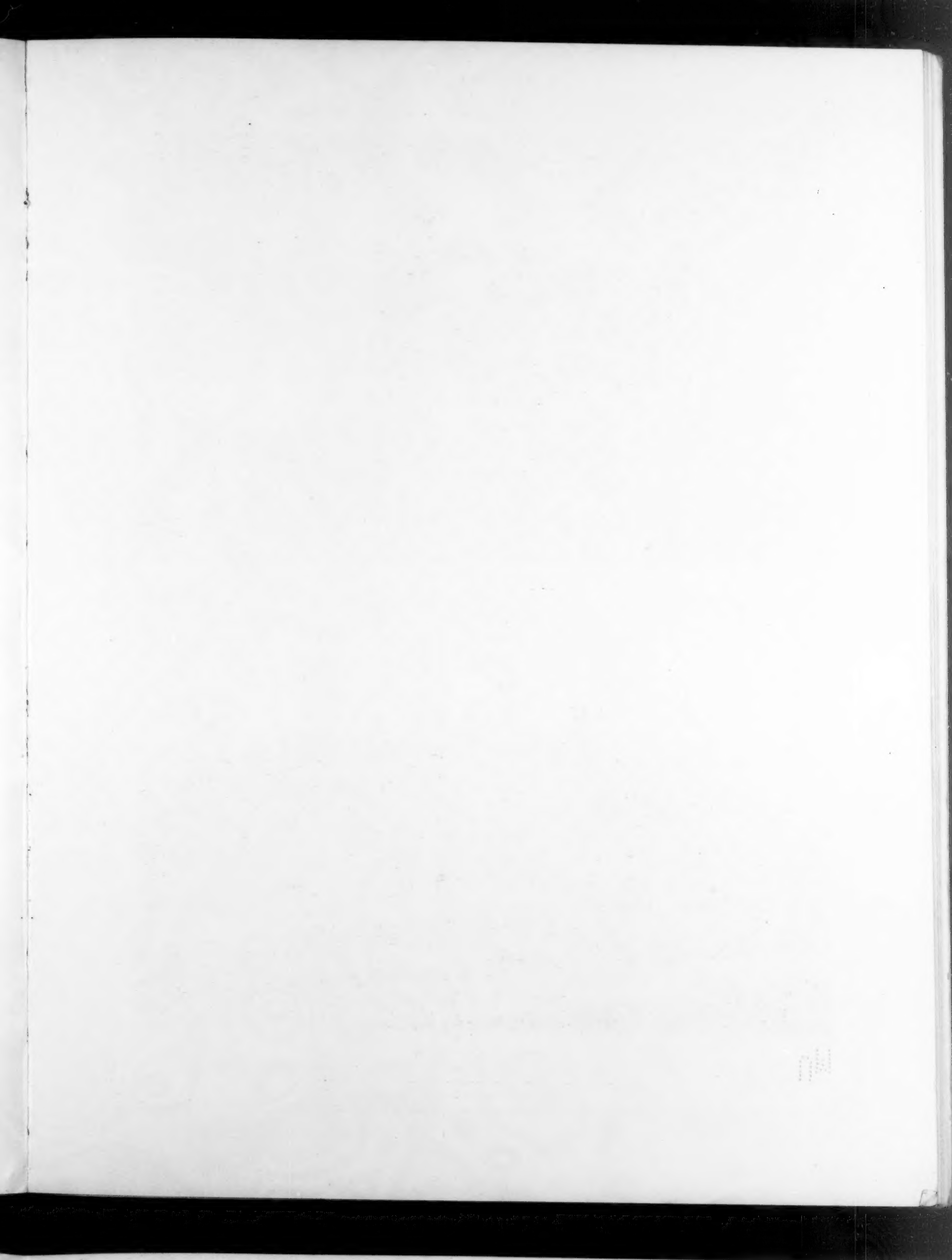


RECEIVING WARD FOR WOMEN.

RECEIVING WARD FOR MEN (SEE BLOCK, PLAN 3) IS THE SAME IN EXTERIOR DESIGN AND ALMOST IDENTICAL IN PLAN.

STATE COLONY FOR THE INSANE, GARDNER, MASS.

JOHN A. FOX, ARCHITECT.



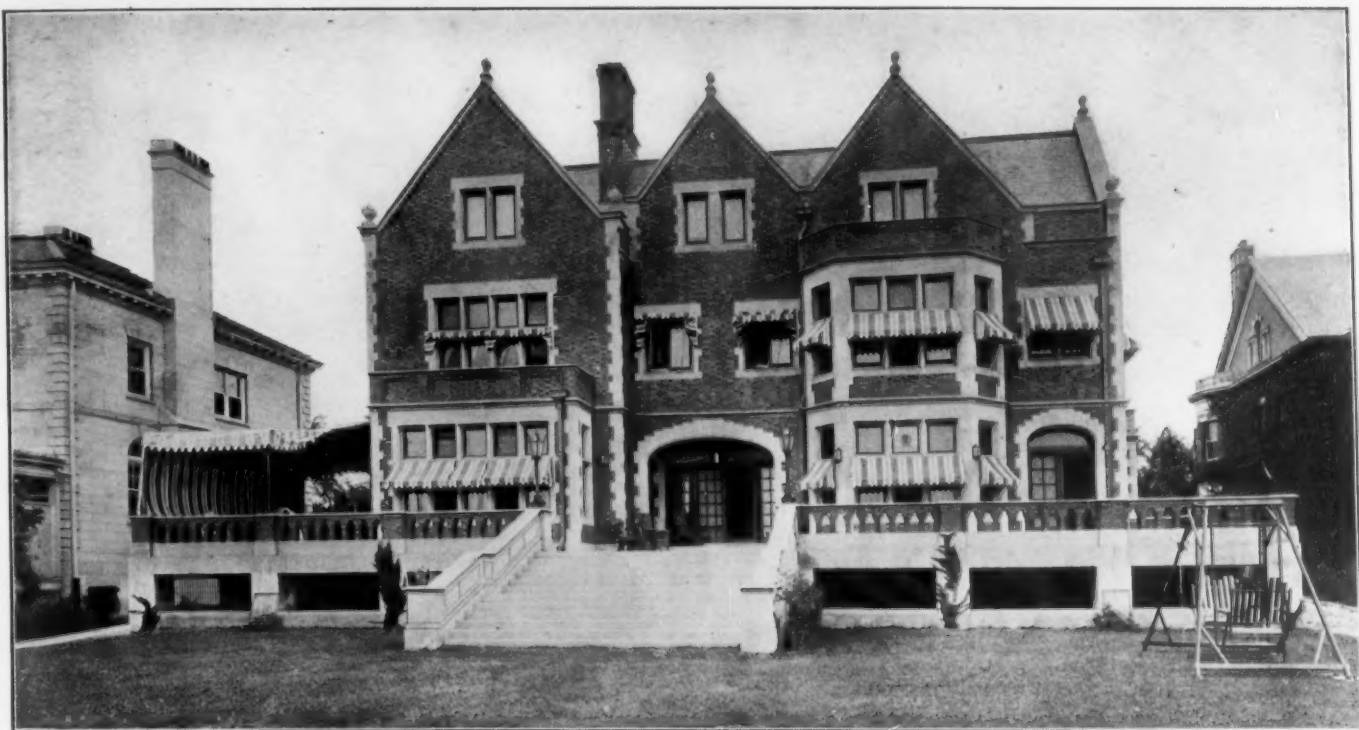


HOUSE FOR HOWLAND S. RUSSELL, ESQ., MILTON, MASS.
PARKER & THOMAS, ARCHITECTS.



HOUSE AND STABLE FOR W. D. SAWYER, ESQ., MILWAUKEE, WIS.
PARKER & THOMAS, ARCHITECTS.
(BUEMMING & DICK ASSOCIATED.)





HOUSE FOR EMORY W. CLARK, ESQ., DETROIT, MICH
GEORGE HUNT INGRAHAM, ARCHITECT.

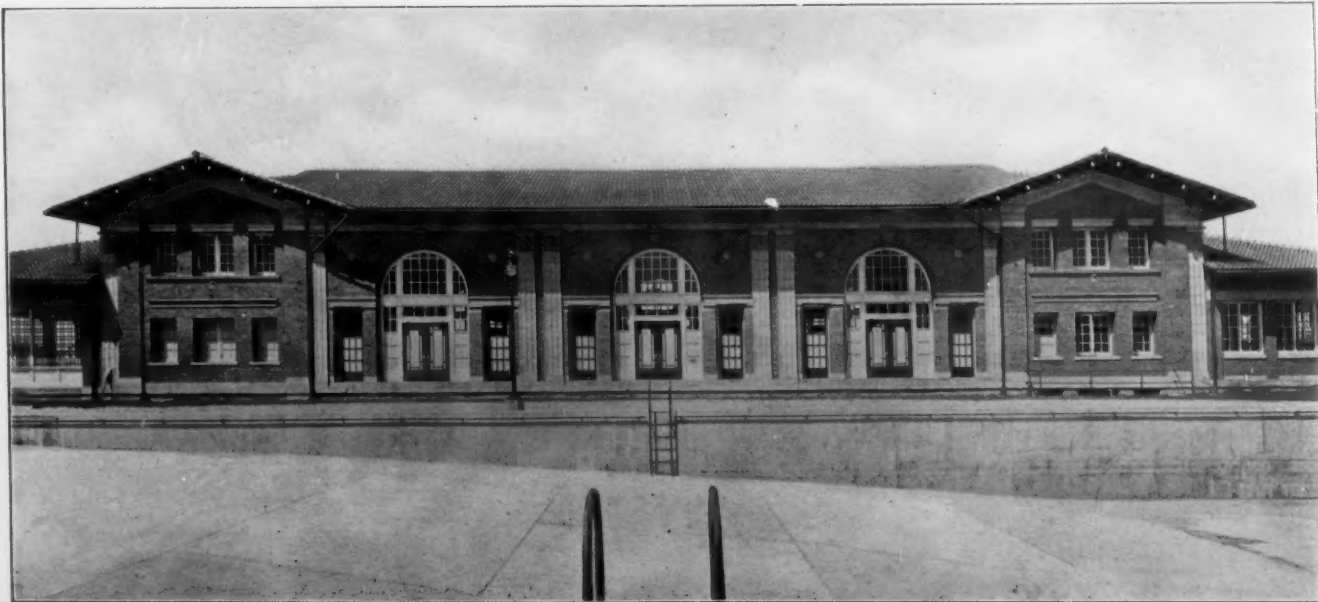
70



FACADE FACING PARK.

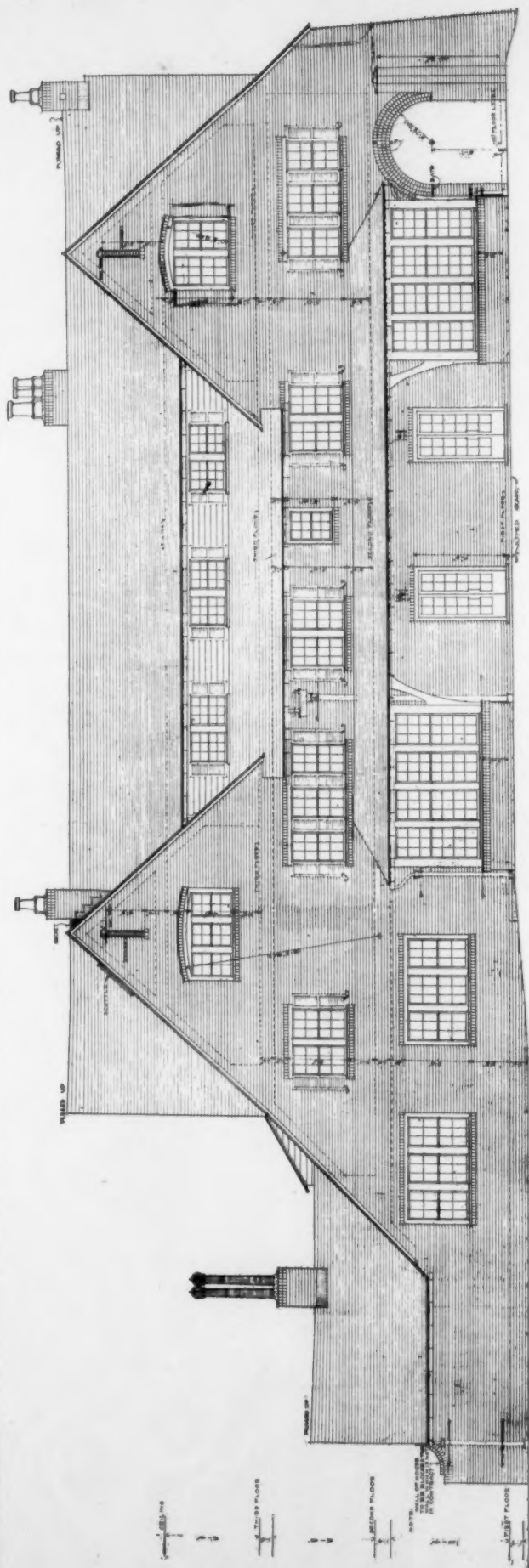


DETAIL OF FACADE.

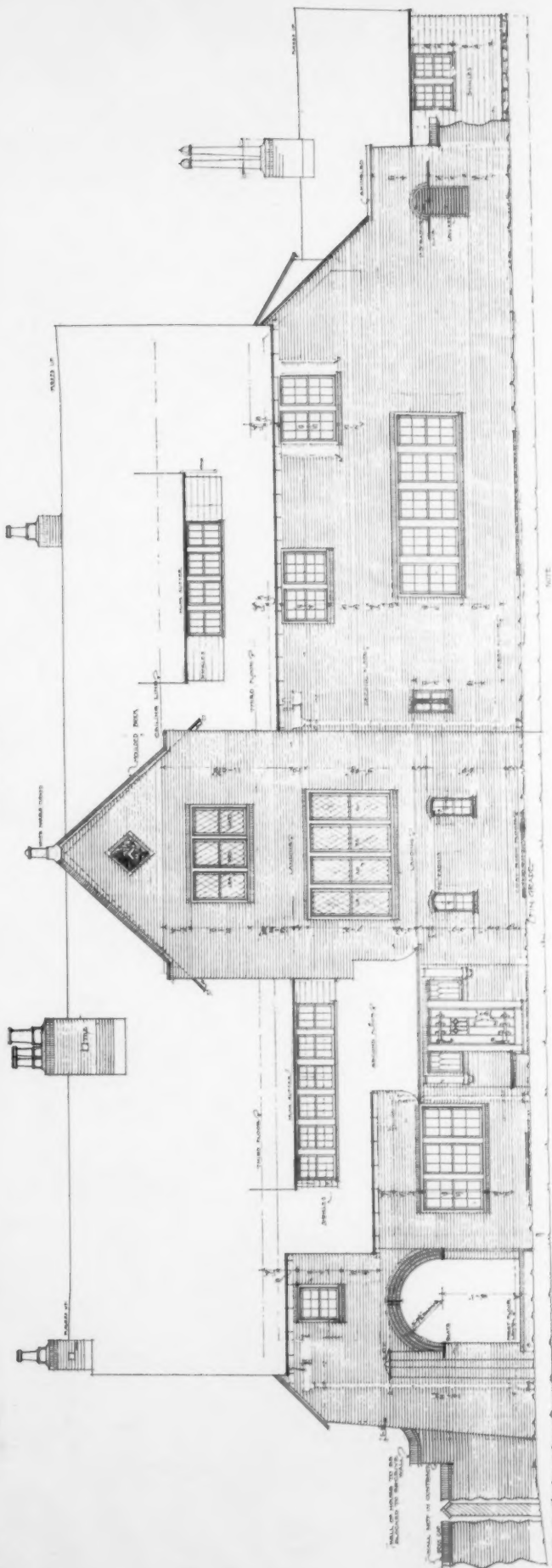


LOOKING ACROSS THE SWIMMING POOL.
MUNICIPAL FIELD HOUSE, OGDEN PARK, CHICAGO.
D. H. BURNHAM & Co., ARCHITECTS.

100



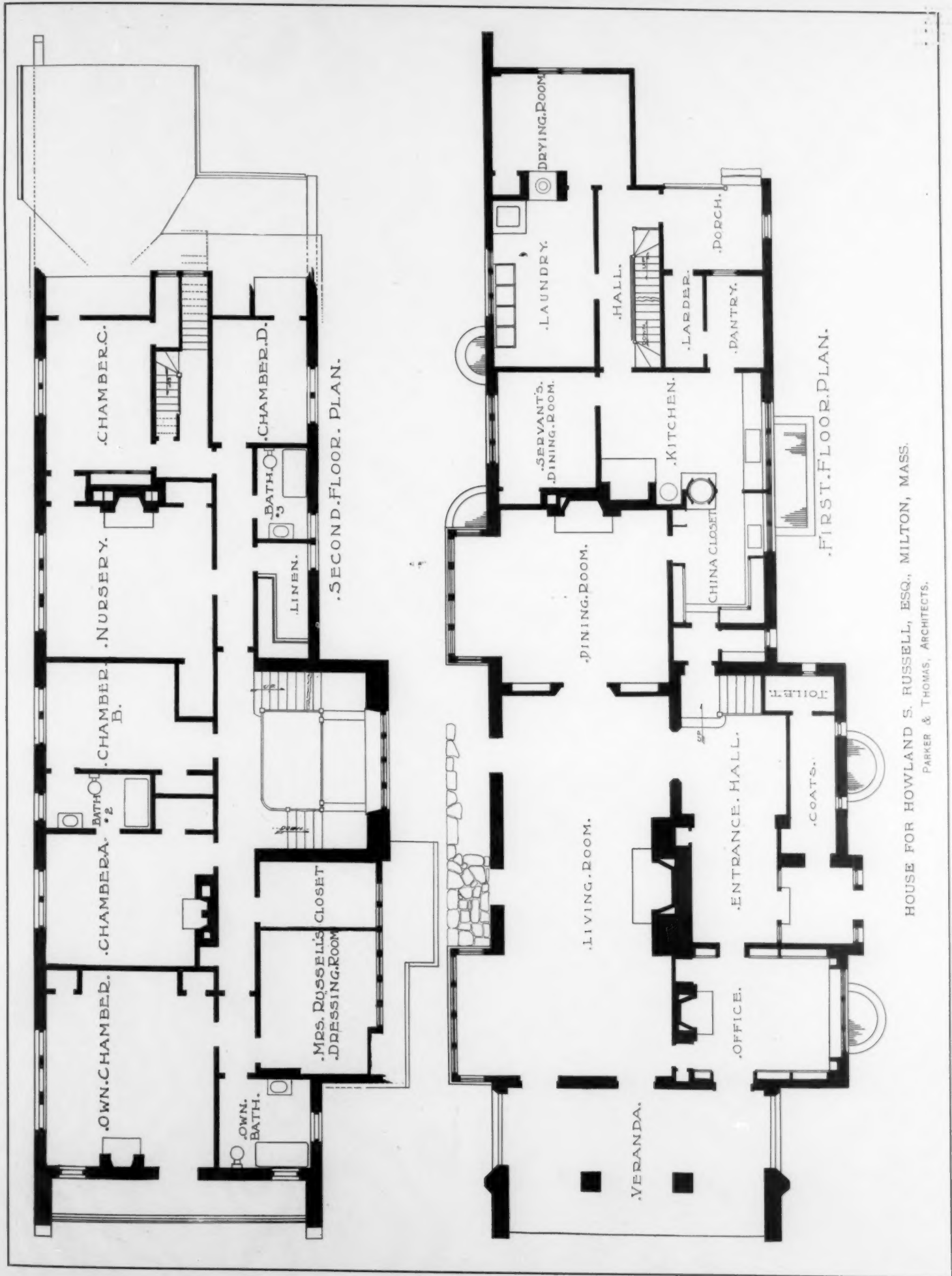
EAST ELEVATION.



WEST ELEVATION.

HOUSE FOR HOWLAND S. RUSSELL, ESQ., MILTON, MASS.
PARKER & THOMAS, ARCHITECTS.

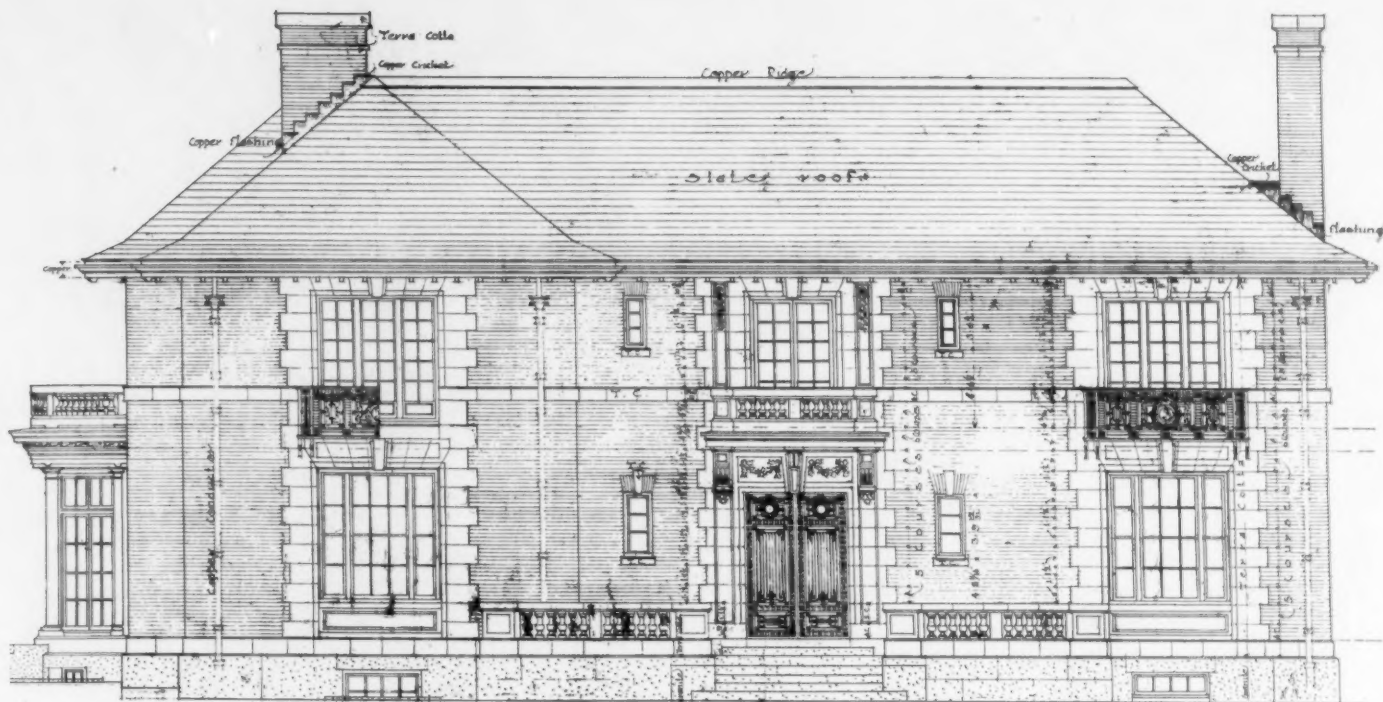




HOUSE FOR HOWLAND S. RUSSELL, ESQ., MILTON, MASS.

PARKER & THOMAS, ARCHITECTS.

1000
1000
1000
1000



FRONT ELEVATION.



HOUSE FOR W. D. SAWYER, ESQ., MILWAUKEE, WIS
PARKER & THOMAS, ARCHITECTS.
(BUEMMING & DICK ASSOCIATED.)

70

VOL. 15, NO. 6.

PLATE 84.



↙ GROUND PLAN, MUNICIPAL FIELD HOUSE, OGDEN PARK, CHICAGO.